



PDP-TELEVISION

Chassis: F33A(P_Europe_HD)_Lily
Model : PS42C91HX/XEC
PS50C91HX/XEC

SERVICE *Manual*

PDP-TELEVISION



PS-42C91H
PS-50C91H

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Refer to the service manual in the GSPN (see the rear cover) for the more information.

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1. Precaution

To avoid possible damage, electric shocks or exposure to radiation, follow the instructions below with regard to safety, installation, service and ESD.

1-1 Safety Precautions

1. Make sure all protective devices are properly installed including non-metallic handles and compartment covers when installing or re-installing the chassis or chassis assemblies.
2. Make sure that no gaps exist between the cabinets for children to insert their fingers in to prevent children from receiving electric shocks. Gaps mentioned above include ventilation holes between the PDP module and the cabinet mask, and the improper installation of the rear cabinet.

Errors may occur when the resistance is below 1.0 MΩ or over 5.2 MΩ.

In these cases, make sure that the device is repaired before sending it back to the customer.

3. Check for Electricity Leakage (Figure 1-1)
Warning: Do not use an insulated transformer for checking the leakage. Use only those current leakage testers or mirroring systems that comply with ANSIC 101.1 and the Underwriter Laboratory's specifications (UL1410, 59.7).

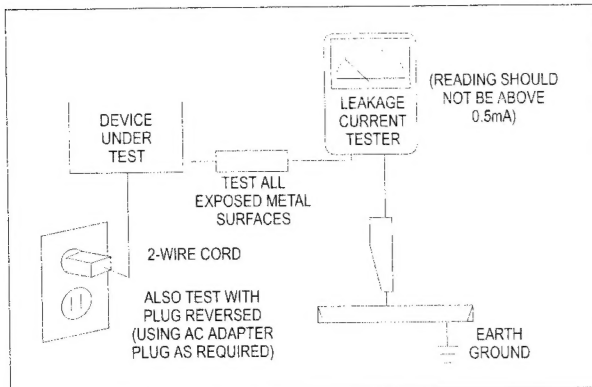


Fig. 1-1 AC Leakage Test

4. A high voltage is maintained within the specified limits using safety parts, calibration and tolerances. When voltage exceeds the specified limits, check each special part.

5. Warning for Engineering Changes:
Never make any changes or additions to the circuit design or the internal part for this product.
Ex: Do not add any audio or video accessory connectors. This might cause physical damage.
Furthermore, any changes or additions to the original design/engineering will invalidate the warranty.
6. Warning - Hot Chassis:
Some TV chassis are directly connected to one end of the AC power cord for electrical reasons.
Without insulated transformers, the product can only be repaired safely when the chassis is connected to the earth end of the AC power source.

To make sure the AC power cord is properly connected, follow the instructions below. Use the voltmeter to measure the voltage between the chassis and the earth ground. If the measurement is over 1.0V, unplug the AC power cord and change the polarity before re-inserting it. Measure the voltage between the chassis and the ground again.
7. Some TV chassis are shipped with an additional secondary grounding system. The secondary system is adjacent to the AC power line. These two grounding systems are separated in the circuit using an unbreakable/unchangeable insulation material.
8. When any parts, material or wiring appear overheated or damaged, replace them with new immediately. When any damage or overheating is detected, correct this immediately and make a regular check of possible errors.
9. Check for the original shape of the lead, especially that of the antenna wiring, any sharp edges, the AC power and the high voltage power. Carefully check if the wiring is too tight, incorrectly placed or loose. Never change the space between the part and the printed circuit board. Check the AC power cord for possible damages. Keep the part or the lead away from any heat-emitting materials.

Precaution

10. Safety Indication:

Some electrical circuits or device related materials require special attention to their safety features, which cannot be viewed by the naked eye. If an original part is replaced with another irregular one, the safety or protective features will be lost even if the new one has a higher voltage or more watts.

Critical safety parts should be bracketed with (⚠ ⚠). Use only regular parts for replacements (in particular, flame resistance and dielectric strength specifications). Irregular parts or materials may cause electric shock or fire.

1-2 Servicing Precautions

Warning 1: First carefully read the "Safety Instruction" in this service manual.

When there is a conflict between the service and the safety instructions, follow the safety instruction at all times.

Warning 2: Any electrolytic capacitor with the wrong polarity will explode.

1. The service instructions are printed on the cabinet, and should be followed by any service personnel.
2. Make sure to unplug the AC power cord from the power source before starting any repairs.
 - (a) Remove or re-install parts or assemblies.
 - (b) Disconnect the electric plug or connector, if any.
 - (c) Connect the test part in parallel with the electrolytic capacitor.
3. Some parts are placed at a higher position than the printed board. Insulated tubes or tapes are used for this purpose. The internal wiring is clamped using buckles to avoid contact with heat emitting parts. These parts are installed back to their original position.
4. After the repair, make sure to check if the screws, parts or cables are properly installed. Make sure no damage is caused to the repaired part and its surroundings.
5. Check for insulation between the blade of the AC plug and that of any conductive materials (i.e. the metal panel, input terminal, earphone jack, etc).
6. Insulation Check Process: Unplug the power cord from the AC source and turn the switch on. Connect the insulating resistance meter (500v) to the AC plug blade.
7. Any B+ interlock should not be damaged.
If the metal heat sink is not properly installed, no connection to the AC power should be made.
8. Make sure the grounding lead of the tester is connected to the chassis ground before connecting to the positive lead. The ground lead of the tester should be removed last.
9. Beware of risks of any current leakage coming into contact with the high-capacity capacitor.
10. The sharp edges of the metal material may cause physical damage, so protect yourself by wearing gloves during the repair.
11. Due to the nature of plasma display panels, partial after-images may appear if a still picture is displayed on the screen for a long period of time.
This is caused by brightness deterioration due to the storage effect of the panel, and to prevent this from happening, we recommend that the brightness and contrast are reduced.
(e.g.) Contrast: 25, Brightness: 50

The insulating resistance between the blade of the AC plug and that of the conductive material should be more than 1 MΩ.

1-3 Static Electricity Precautions

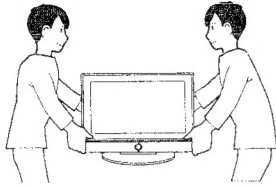
1. Some semi-conductive ("solid state") devices are vulnerable to static electricity. These devices are known as ESD. ESD includes the integrated circuit and the field effect transistor. To avoid any materials damage from electrostatic shock, follow the instructions described below.
2. Remove any static electricity from your body by connecting the earth ground before handling any semi-conductive parts or assemblies. Alternatively, wear a dischargeable wrist-belt.
(Make sure to remove any static electricity before connecting the power source - this is a safety instruction for avoiding electric shock)
3. Remove the ESD assembly and place it on a conductive surface such as aluminum foil to prevent accumulating static electricity.
4. Do not use any Freon-based chemicals.
Such chemicals will generate static electricity that causes damage to the ESD.
5. Use only grounded-tip irons for soldering purposes.
6. Use only anti-static solder removal devices.
Most solder removal devices do not support an anti-static feature. A solder removal device without an anti-static feature can store enough static electricity to cause damage to the ESD.
7. Do not remove the ESD from the protective box until the replacement is ready. Most ESD replacements are covered with lead, which will cause a short to the entire unit due to the conductive foam, aluminum foil or other conductive materials.
8. Remove the protective material from the ESD replacement lead immediately after connecting it to the chassis or circuit assembly.
9. Take extreme caution in handling any uncovered ESD replacements. Actions such as brushing clothes or lifting your leg from the carpet floor can generate enough static electricity to damage the ESD.

CAUTION

These servicing instructions are for use by qualified service personnel only.
To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

1-4 Installation Precautions

1. For safety reasons, more than two people are required for carrying the product.



2. Keep the power cord away from any heat emitting devices, as a melted covering may cause fire or electric shock.
3. Do not place the product in areas with poor ventilation such as a bookshelf or closet. The increased internal temperature may cause fire.
4. Bend the external antenna cable when connecting it to the product. This is a measure to protect it from being exposed to moisture. Otherwise, it may cause a fire or electric shock.
5. Make sure to turn the power off and unplug the power cord from the outlet before repositioning the product. Also check the antenna cable or the external connectors if they are fully unplugged. Damage to the cord may cause fire or electric shock.
6. Keep the antenna far away from any high-voltage cables and install it firmly. Contact with the high-voltage cable or the antenna falling over may cause fire or electric shock.
7. When connecting the RF antenna, check for a DTV receiving system and install a separate DTV reception antenna for areas with no DTV signal.
8. When installing the product, leave enough space (4") between the product and the wall for ventilation purposes.
A rise in temperature within the product may cause fire.
9. When moving a PDP with removable speakers, detach the speakers first before moving the main body. Moving the PDP main body without separating the speakers may cause the speakers to detach, possibly causing damage or injury.

MEMO




2. Product Specification

2-1 Product Specification

| Features | | | |
|--------------------|--|--------------------------------------|--------------|
| Block | Specification | Major IC | Remark |
| RF | Tuner | TCPS3001PD32S(H) | SEMCO |
| PDP Module | Samsung SDI W2A | 42"HD/50"HD | SAMSUNG SDI |
| Power | Input Voltage: AC 100~240V, 50/60Hz | | |
| Video | Scaler | MT8202FG | MTK |
| | Video Decoder | | |
| Sound | Sound AMP | NTP3000 | Neo Fidelity |
| | Audio CODEC | MT8291(IC8002) | MTK |
| Cabinet | C9 Design | | |
| Specification | | | |
| Model | PS-42C91H | PS-50C91H | |
| Screen Size | 42 Inches (16:9) | 50 Inches (16:9) | |
| Dimensions (WxHxD) | 1055 x 775 x 341 mm (With stand) | 1227.1 x 861.3 x 341 mm (With stand) | |
| Weight | 40.4 kg (With stand) | 49.7 kg (With stand) | |
| Voltage | AC 100~240V, 50/60Hz | | |
| Colour System | PAL, SECAM, NTSC4.43, NTSC 3.58 | | |
| Sound System | BG, DK, I, M | | |
| PC Resolution | 1024 x 768 @ 60/75Hz | 1360 x 768 @ 120 Hz | |
| ANTENNA input | AIR IN (75Ω unbalanced) | | |
| VIDEO input | SCART1, SCART2 AV1, AV2 S-VIDEO COMPONENT1 - 480i/480p/720p/1080i PC HDMI1/2 (DVI Compatible HDMI) (Option) | | |
| AUDIO input | SCART1, SCART2 AV1, AV2 S-VIDEO COMPONENT1 - 480i/480p/720p/1080i PC DVI | | |
| Audio Output | AUDIO (L/R) | | |
| Speaker Output | 10W + 10W | | |








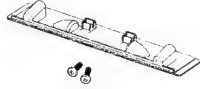





2-2 Specifications Analysis

※ ○: application, X: non-application




| Model | | PS-42C91H (Lily-42HD) | PS-50C91H (Lily-50HD) | PS-42P7HD (Alps-42HD) |
|-------------|------------------------|---|--|---|
| Design | |  |  |  |
| Basic | Display Type | PDP TV | PDP TV | PDP TV |
| | Built-In Tuner | ○ | ○ | ○ |
| | PC Resolution | 1024 x 768 @60Hz | 1360 x 768 @120Hz | 1024 x 768 @75Hz |
| | PDP Module | W2A | W2A | V5.1 |
| | Screen Size | 42 inches | 50 inches | 42 inches |
| | Aspect Ratio | 16 : 9 | 16 : 9 | 16 : 9 |
| | Dimensions (WxHxD) | 1055 x 775 x 341 mm (With stand) | 1227.1 x 861.3 x 341 mm (With stand) | 1055 x 775 x 341 mm (With stand) |
| Picture | Weight | 40.4 Kg (With stand) | 49.7 Kg (With stand) | 40.4 kg (With stand) |
| | Brightness | 1,100 Cd/m2 | 1,100 Cd/m2 | 1,100 Cd/m2 |
| | Contrast Ratio | 10000:1 | 10000:1 | 10000:1 |
| Audio | Image Enhancer | FBE2 | FBE2 | FBE |
| | Equalizer | ○ | ○ | ○ |
| | Auto Volume | ○ | ○ | ○ |
| | Surround Sound | SRS TruSurround | SRS TruSurround | SRS TruSurround |
| | Speaker Output | 10 W + 10 W | 10 W + 10 W | 15 W + 15 W |
| | Speaker | Included | Included | Included |
| Features | PIP | ○ | ○ | ○ |
| | Double Screen | ○ | ○ | X |
| | Caption | ○ | ○ | X |
| | Still Image | ○ | ○ | ○ |
| | My Color Control | ○ | ○ | X |
| | Color Weakness | X | X | X |
| | Energy Saving | ○ | ○ | ○ |
| Connections | Screen Burn Protection | ○ | ○ | ○ |
| | Antenna | 1 Input | 1 Input | 1 Input |
| | CVBS | 1AV (Rear) | 1AV (Rear) | 1AV(Rear) |
| | S-Video | 1 Input | 1 Input | 1 Input |
| | Component(Y/PB/PR) | 1 Input | 1 Input | 1 Input |
| | PC(D-SUB) | 1 Input | 1 Input | 1 Input |
| | DVI | ○ | ○ | ○ |
| | HDMI | 2 Input | 2 Input | 2 Input |
| | Scart | 2 Input | 2 Input | 2 Input |
| | Optical | X | X | X |
| | Coaxial | X | X | X |

※ For the power supply and power consumption, refer to the label attached to the product.

2-3 Accessories

| Accessories | | Item | Item code | Remark |
|--|---|---|---|--|
| Supplied Accessories |  | Remote Control Batteries | BN59-00609A 4301-000103 | Samsung Service center |
| |  | Power Cord | 3903-000145 | |
| |  | Owner's Instructions | BN68-01171Q | |
| |  | Warranty Card Registration Card Safety Guide Manual | BN68-00514C AA68-03575A AA68-03242E | |
| |  | Cloth-Clean | BN63-01798A | |
| |  | Ferrite Core for Earphone/Power Cord | 3301-001110 | |
| |  | Ferrite Core for S-VIDEO/Power Cord | 3301-001305 | |
| |  | Cover-Bottom Screws (2ea) | BN63-03055A 6003-001621 | |
| Accessories that can be purchased additionally |  | S-VIDEO Cable 1200mm | BN39-00149A | Electronics Store/ Internal shopping mall |
| |  | HDMI Cable 3000mm | BN39-00641A | |
| |  | HDMI/DVI cable 3000mm | BN39-00643A | |
| |  | Component Cables (RCA) 1500mm | BN39-00279A | |
| |  | Scart Cable | None | |

Product Specification

| Accessories | | Item | Item code | Remark |
|--|---|--------------------------|-------------|--|
| Accessories that can be purchased additionally |  | PC Cable 1830mm | BN39-00115A | Electronics Store/ Internal shopping mall |
| |  | PC Audio Cable 2000mm | BN39-00061B | |
| |  | Antenna Cable 3000mm | BN39-00333A | |

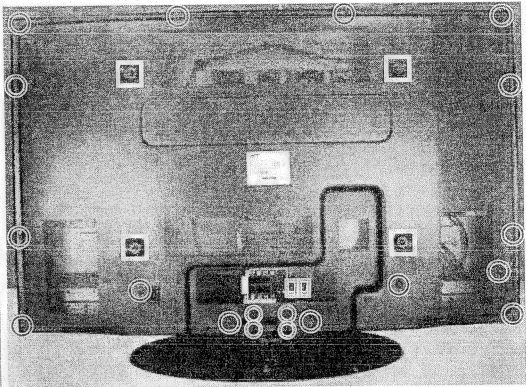
3. Disassembly & Reassembly

3-1 Overall Disassembly & Reassembly

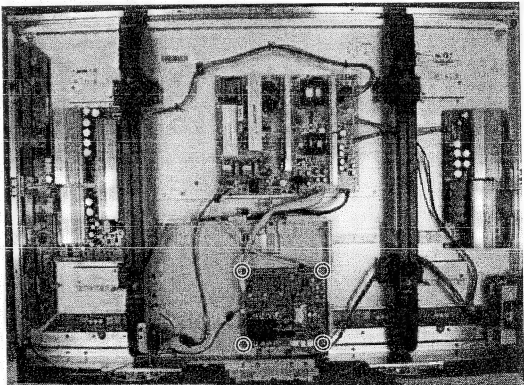
△ Notice

- Be sure to separate the power cord before disassembling the unit.
- Discharge the capacitors first when separating PCB's with high capacity capacitors such as SMPS, X Main Board, Y Main Board, etc. (A spark may be generated by the electric charge, and there is danger of electronic shock.)
- Check that the cables are properly connected referring to the circuit diagram when disassembling or assembling the unit taking care not to damage the cables.
- Take care not to scratch the Glass Filter in the front.
- Assemble the boards in the reverse order of the disassembly.
- The plasma must be laid down on a flat padded surface for disassembly and reassembly.

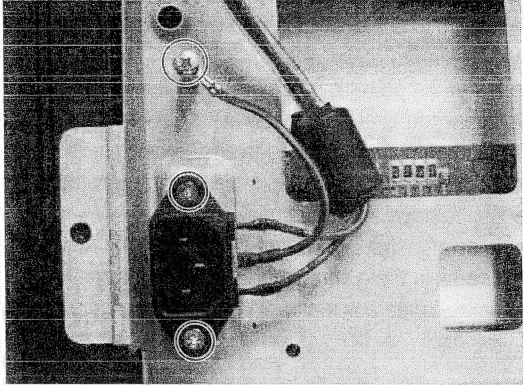
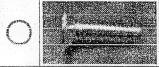

3-1-1 Separation of ASSY COVER P-REAR

| Part Name | Description | Description Photo |
|------------|--|---|
| Cover Rear | <ol style="list-style-type: none"> ① Remove 4 screws. (□) : M8,L16,ZPC(BLK),SWRCH18A,WP ② Remove 15 screws. (○) : BH,+,B,M4,L3,ZPC(BLK) ③ Remove 4 screws. (○) : PH,+,WSP,S,M4,L35,ZPC(BLK) ④ Remove the 2 Hex nuts for the PC input. (□) : #4-40,L6,NI PLT,C3601,- ⑤ Remove the Cover Rear. <p>△: Please lay the PDP unit face down on a soft surface when removing the stand.</p> |  |

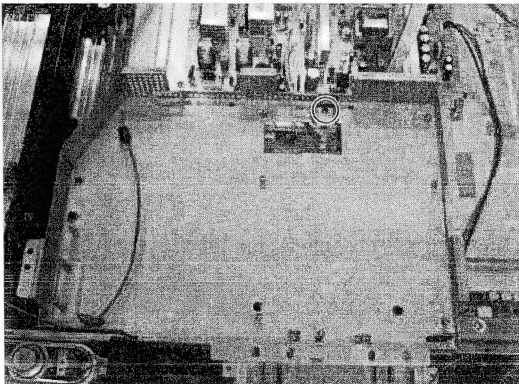

3-1-2 Separation of ASSY PCB MISC-MAIN

| Part Name | Description | Description Photo |
|------------|--|--|
| Main Board | <ol style="list-style-type: none"> ① Detach all connectors from the Main Board. ② Remove 4 screws. : PH,+,WWP,M3,L8,NI PLT ③ Remove the Main Board. |  |

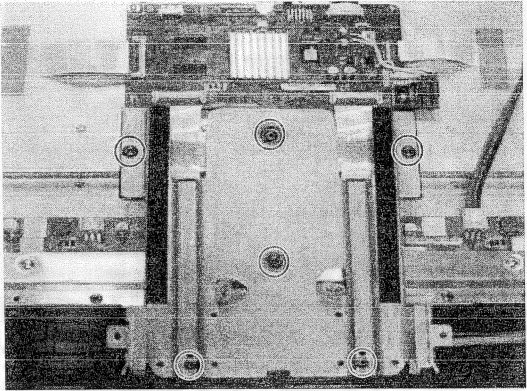


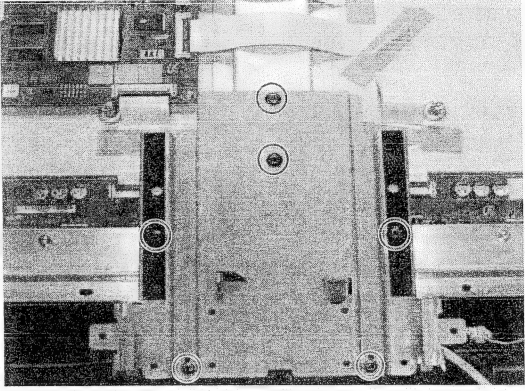


3-1-3 Separation of FILTER-EMI AC LINE

| Part Name | Description | Description Photo |
|--------------------|--|---|
| FILTER-EMI AC LINE | <ol style="list-style-type: none"> ① Detach connector from Main SMPS. ② Remove 2 screws. (○) : PH,+,WWP,M3,L8,NI PLT ③ Remove a screw. (○) : BH,+,S,M4,L10,ZPC(BLK) ④ Remove FILTER-EMI AC LINE. |  <div>   </div> |

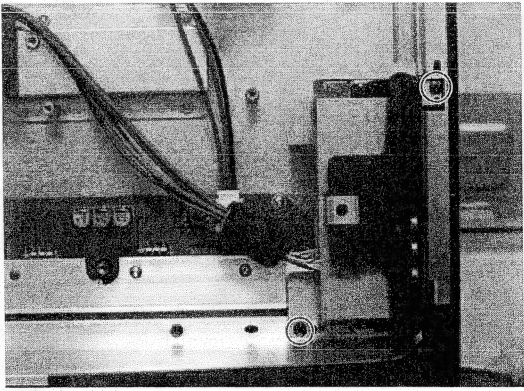


3-1-4 Separation of BRACKET-PCB

| Part Name | Description | Description Photo |
|-------------|---|---|
| Bracket PCB | <ol style="list-style-type: none"> ① Remove a screw. : BH,+,S,M4,L10,ZPC(BLK) ② Remove the BRACKET-PCB. |  <div>  </div> |

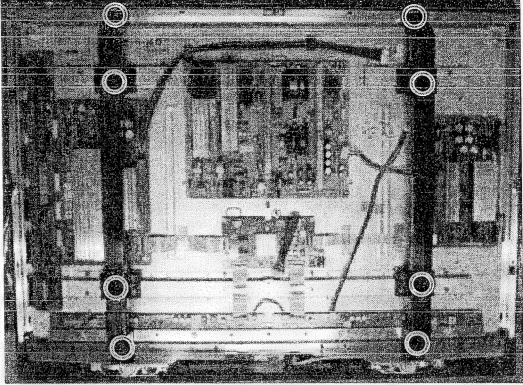


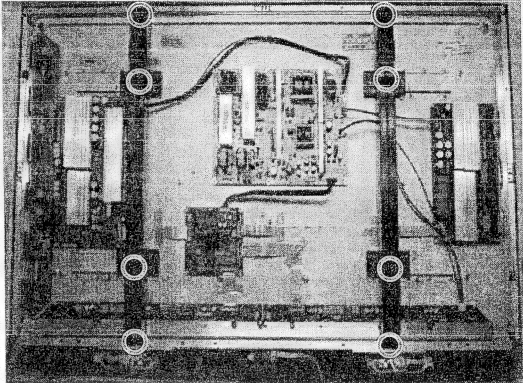


3-1-5 Separation of ASSY BRACKET

| Part Name | Description | Description Photo |
|-------------|---|--|
| 42" Bracket | <div>① Remove 4 screws. (○) : BH,+,S,M4,L10,ZPC(BLK)</div> <div>② Remove 2 screws. (○) : BH,+,B,M4,L3,ZPC(BLK)</div> <div>③ Remove Bracket.</div> | <div></div> <div><div>○</div><div></div></div> <div><div>○</div><div></div></div> |
| 50" Bracket | <div>① Remove 4 screws. (○) : BH,+,S,M4,L10,ZPC(BLK)</div> <div>② Remove 2 screws. (○) : BH,+,B,M4,L3,ZPC(BLK)</div> <div>③ Remove Bracket.</div> | <div></div> <div><div>○</div><div></div></div> <div><div>○</div><div></div></div> |

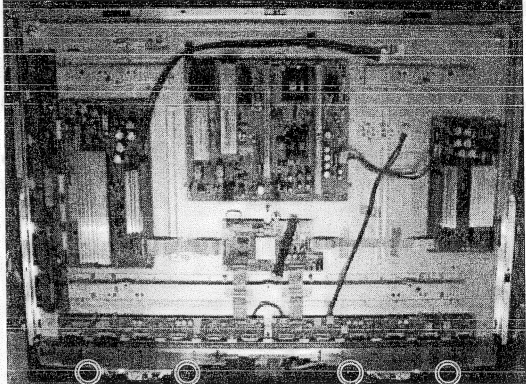

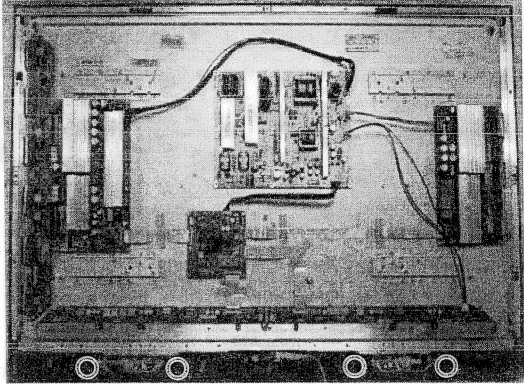

3-1-6 Separation of ASSY BOARD P-SIDE AV

| Part Name | Description | Description Photo |
|-----------|---|---|
| Side AV | <div>① Remove a screw. (○) : BH,+,B,M4,L3,ZPC(BLK)</div> <div>② Remove a screw. (○) : BH,+,S,M4,L10,ZPC(BLK)</div> <div>③ Remove the Side AV.</div> | <div></div> <div><div>○</div><div></div></div> <div><div>○</div><div></div></div> |

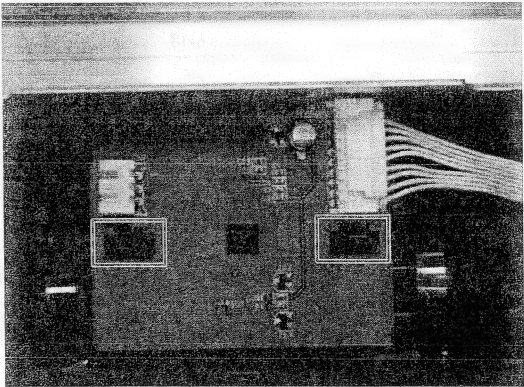
3-1-7 Separation of ASSY BRACKET P-WALL

| Part Name | Description | Description Photo |
|------------------|---|---|
| 42" Wall Bracket | <p>① Remove 2 screws. (○) : BH,+,B,M4,L3,ZPC(BLK)</p> <p>② Remove 6 screws. (○) : BH,+,S,M4,L10,ZPC(BLK)</p> <p>③ Remove Wall Bracket.</p> <p>⚠ : Please lay the PDP panel face down on a soft surface when separating front cover.</p> |    |
| 50" Wall Bracket | <p>① Remove 2 screws. (○) : BH,+,B,M4,L3,ZPC(BLK)</p> <p>② Remove 6 screws. (○) : BH,+,S,M4,L10,ZPC(BLK)</p> <p>③ Remove Wall Bracket.</p> <p>⚠ : Please lay the PDP panel face down on a soft surface when separating front cover.</p> |    |

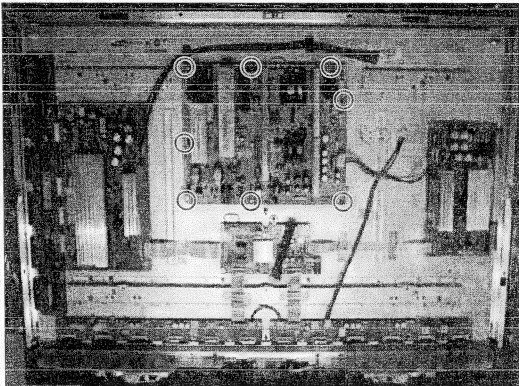

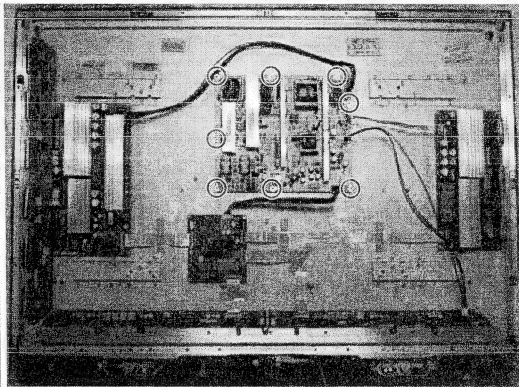

3-1-8 Separation of ASSY SPEAKER P

| Part Name | Description | Description Photo |
|-------------|---|---|
| 42" Speaker | <div>① Remove 4 screws. : BH,+,WP,B,M4.0,L3,ZPC(BLK), SWRCH18A</div> <div>② Remove the Speaker.</div> | <div></div> <div></div> |
| 50" Speaker | <div>① Remove 4 screws. : BH,+,WP,B,M4.0,L3,ZPC(BLK), SWRCH18A</div> <div>② Remove the Speaker.</div> | <div></div> <div></div> |

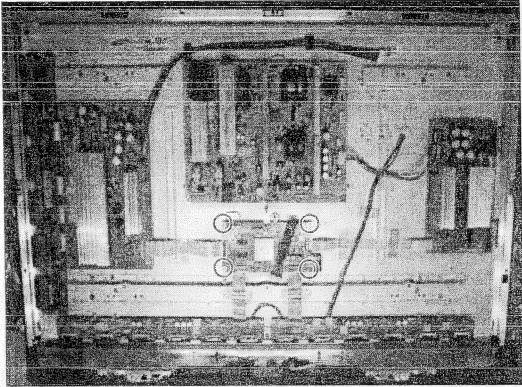

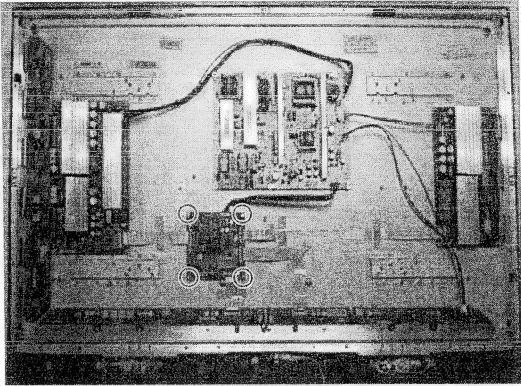

3-1-9 Separation of ASSY BOARD P-POWER&IR

| Part Name | Description | Description Photo |
|------------------|---|---|
| Power & IR Board | <div>① Detach all connectors from the Power&IR Board.</div> <div>② Remove the Power&IR PCB unlocking the 2 holders.</div> | <div></div> |

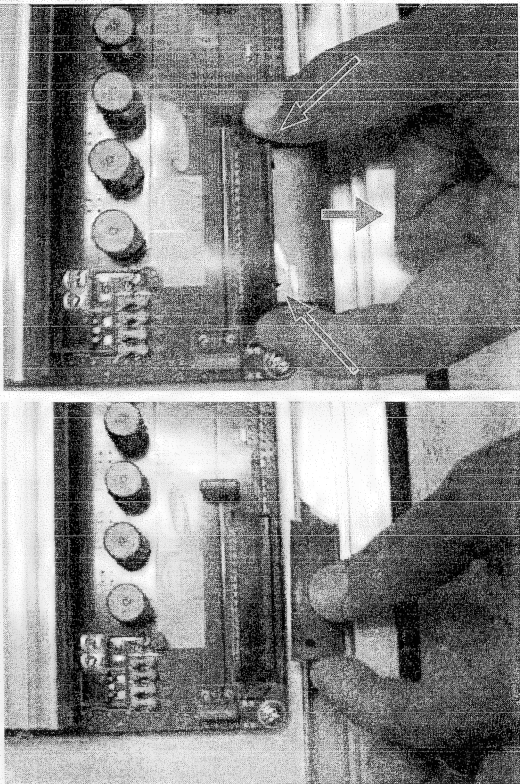
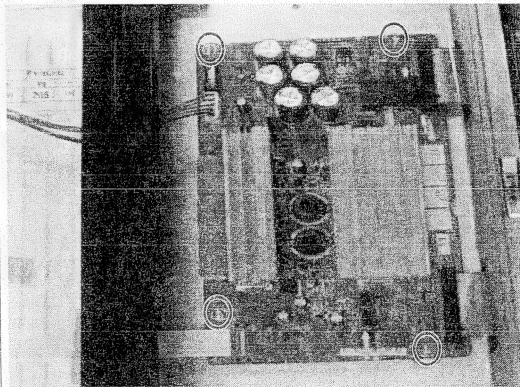
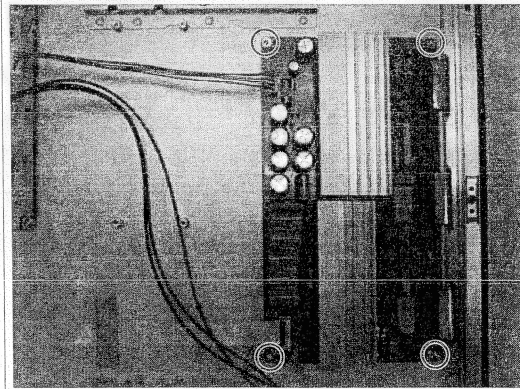
3-1-10 Separation of SMPS-PDP TV

| Part Name | Description | Description Photo |
|-----------|--|---|
| 42" SMPS | <ol style="list-style-type: none"> ① Detach all connectors from the SMPS. ② Remove 8 screws. : PH,+,WWP,M3,L8,NI PLT ③ Remove the SMPS. <p>⚠ : Wear gloves when handling the power board as there may be some remaining electrical charge in the capacitor. Specifically, avoid touching any part of the capacitor.</p> |   |
| 50" SMPS | <ol style="list-style-type: none"> ① Detach all connectors from the SMPS. ② Remove 8 screws. : PH,+,WWP,M3,L8,NI PLT ③ Remove the SMPS. <p>⚠ : Wear gloves when handling the power board as there may be some remaining electrical charge in the capacitor. Specifically, avoid touching any part of the capacitor.</p> |   |

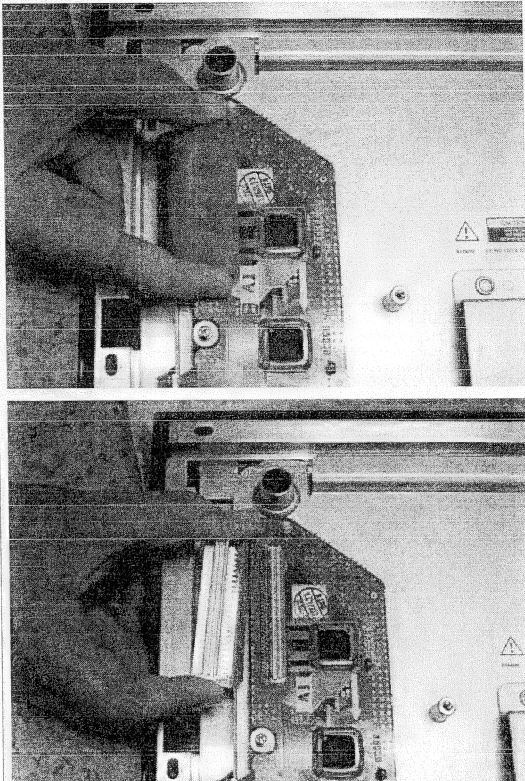
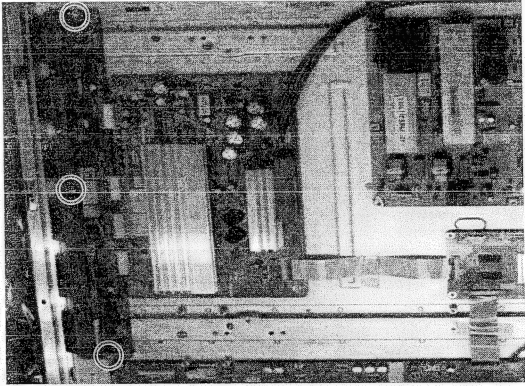

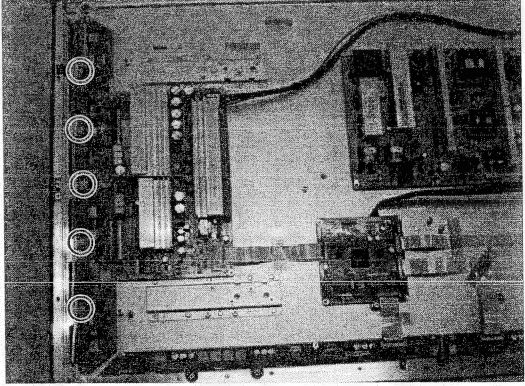

3-1-11 Separation of ASSY PDP MODULE P-LOGIC MAIN BOARD

| Part Name | Description | Description Photo |
|-----------------|---|---|
| 42" Logic Board | <div>① Detach all connectors from the Logic Main Board.</div> <div>② Remove 4 screws. : WSP,PH,+,M3,L8,NI PLT</div> <div>③ Remove the Logic Main Board.</div> | <div></div> <div></div> |
| 50" Logic Board | <div>① Detach all connectors from the Logic Main Board.</div> <div>② Remove 4 screws. : WSP,PH,+,M3,L8,NI PLT</div> <div>③ Remove the Logic Main Board.</div> | <div></div> <div></div> |

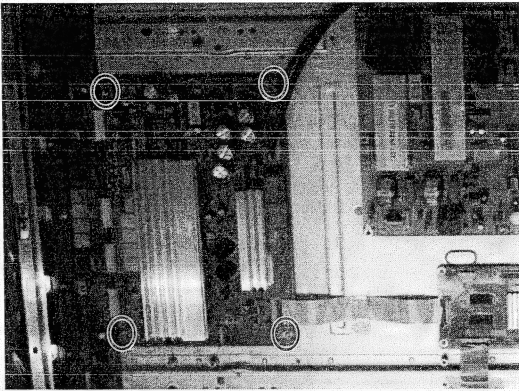
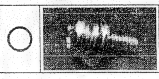
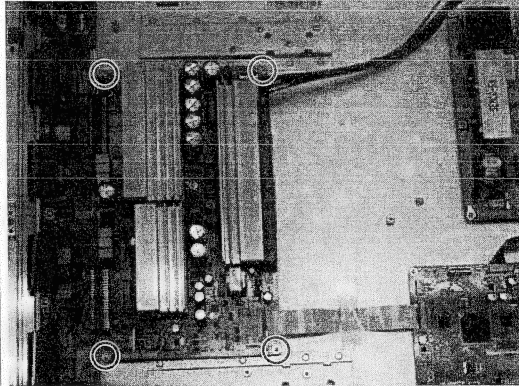

3-1-12 Separation of ASSY PDP MODULE P-X MAIN BOARD

| Part Name | Description | Description Photo |
|------------------|---|--|
| Flat Cable | <p>① Detach all Connectors from the X Main Board.</p> <p>※ To separate the Flat Cable of the X-Board, press the upper and the lower sides of the connector.</p> |  |
| 42" X-Main Board | <p>① Remove 4 screws. : PH,+,WWP,M3,L8,NI PLT</p> <p>② Remove the X-Main Board.</p> |  |
| 50" X-Main Board | <p>① Remove 4 screws. : PH,+,WWP,M3,L8,NI PLT</p> <p>② Remove the X-Main Board.</p> |  |

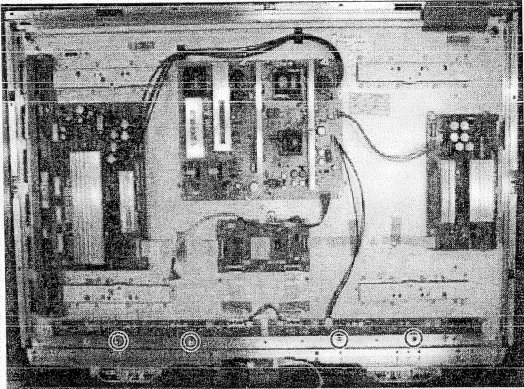

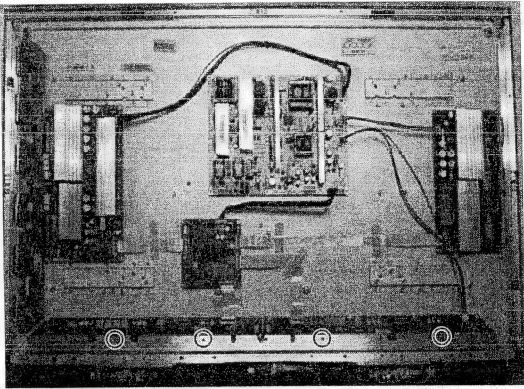

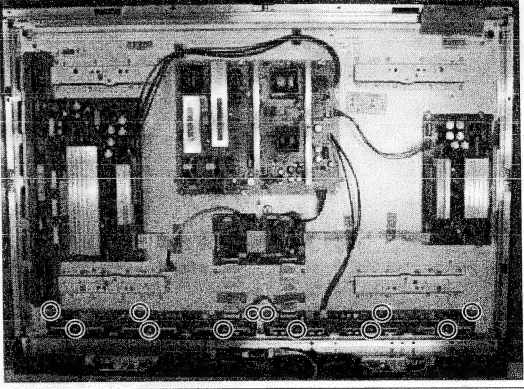

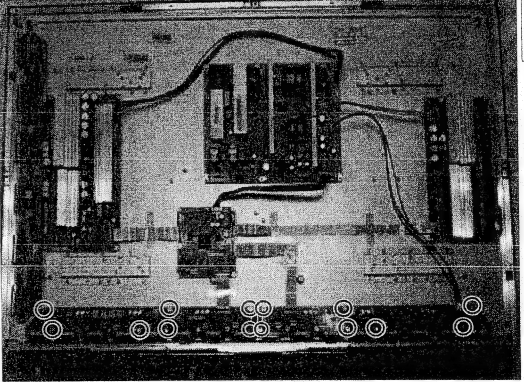

3-1-13 Separation of ASSY PDP MODULE P-Y MAIN BOARD

| Part Name | Description | Description Photo |
|------------------|--|--|
| Flat Cable | ① Detach the 6 scan board connectors from the panel by pulling the holder from both the top and bottom ends. |  |
| 42" Y-Scan Board | ① Remove 3 screws. : PH,+,WWP,M3,L8,NI PLT |   |
| 50" Y-Scan Board | ① Remove 5 screws. : PH,+,WWP,M3,L8,NI PLT |   |

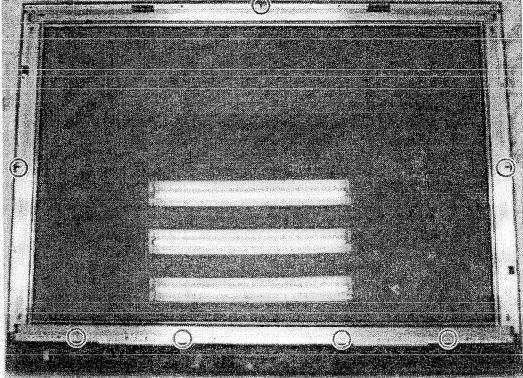




Disassembly & Reassembly

| Part Name | Description | Description Photo |
|------------------------|--|---|
| 42" Y-Main Board | <ol style="list-style-type: none"> Remove 4 screws. : PH,+,WWP,M3,L8,NI PLT Detach all connectors from the Y-Main Board. |   |
| 50" Y-Main Board | <ol style="list-style-type: none"> Remove 4 screws. : PH,+,WWP,M3,L8,NI PLT Detach all connectors from the Y-Main Board. |   |

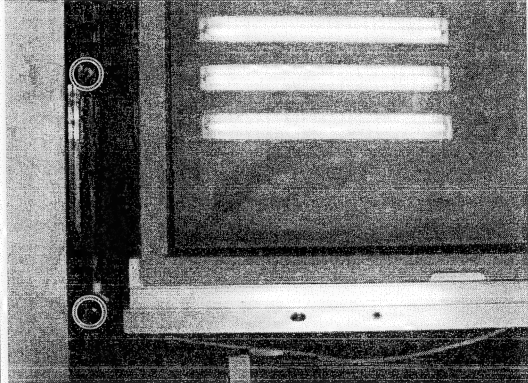


3-1-14 Separation of ASSY PDP MODULE P-ADDRESS BUFFER BOARD

| Part Name | Description | Description Photo |
|---------------------|---|--|
| 42" Still Bar | ① Remove 4 screws. : PH,+,WWP,M3,L8,NI PLT ② Remove the still bar. |   |
| 50" Still Bar | ① Remove 4 screws. : PH,+,WWP,M3,L8,NI PLT ② Remove the still bar. |   |
| 42" Buffer Board | ① Detach the all connectors from the buffer board. ② Remove 3 screws. : PH,+,WWP,M3,L8,NI PLT ③ Remove the E-Board and F-Board. |   |
| 50" Buffer Board | ① Detach the all connectors from the buffer board. ② Remove 14 screws. : PH,+,WWP,M3,L8,NI PLT ③ Remove the E-Board and F-Board. |   |

3-1-15 Separation of ASSY PANEL BRACKETS

| Part Name | Description | Description Photo |
|----------------|---|---|
| Panel Brackets | <div>① Remove 3 screws. (○) : BH,+,B,M4,L3,ZPC(BLK)</div> <div>② Remove 4 screws. (○) : BH,+,S,M4,L10,ZPC(BLK)</div> <div>③ Remove the Side Panel Brackets.</div> | <div></div> <div><div></div><div></div></div> |

3-1-16 Separation of ASSY PCB FUNCTION

| Part Name | Description | Description Photo |
|----------------|---|--|
| Function Board | <div>① Remove 2 screws. : BH,+,B,M4,L3,ZPC(BLK)</div> <div>② Remove the Function Board.</div> | <div></div> <div></div> |

4. Troubleshooting

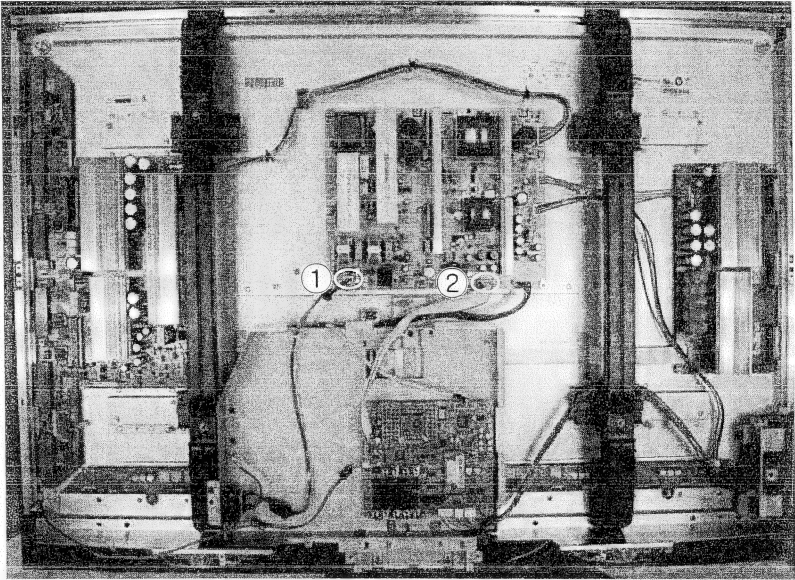
4-1 Troubleshooting

4-1-1 First Checklist for Troubleshooting

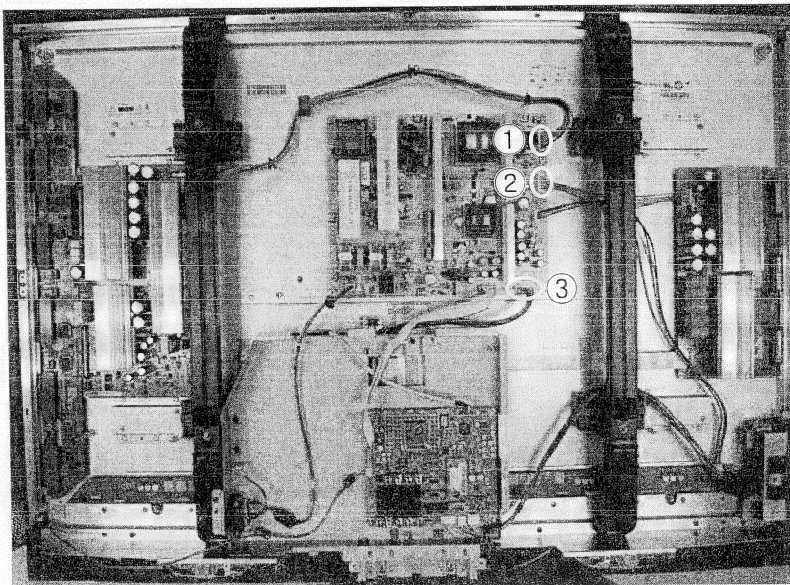
1. Check the various cable connections first.
 - Check to see if there is a burnt or damaged cable.
 - Check to see if there is a disconnected or loose cable connection.
 - Check to see if the cables are connected according to the connection diagram.
2. Check the power input to the Main Board.
3. Check the voltage in and out between the SMPS ↔ Main Board, between the SMPS ↔ X, Y Main Board, and between the Logic Boards.

4-1-2 Checkpoints by Error Mode

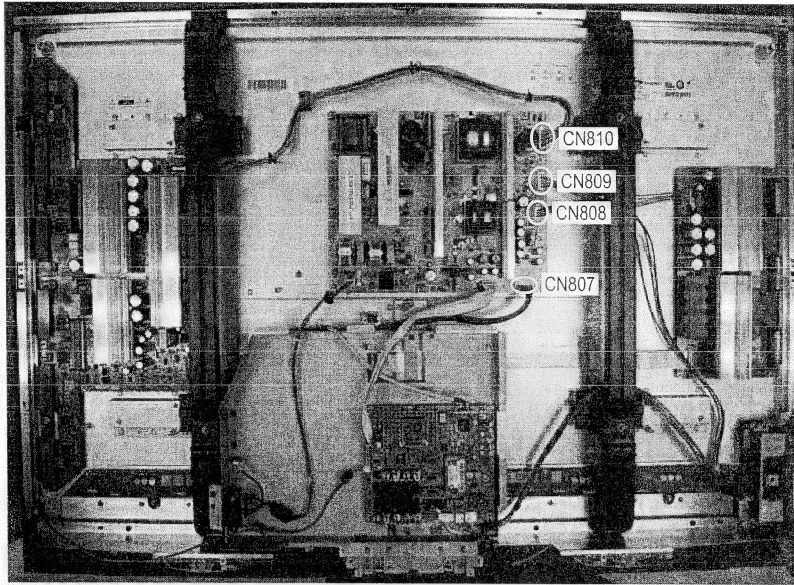
No Power

| | |
|----------------------------|--|
| Symptom | <div><div></div><div><ul style="list-style-type: none">- The LEDs on the front panel do not work when connecting the power cord.- The SMPS relay does not work when connecting the power cord.- The unit appears to be dead.</div></div> |
| Major Checklist | <div><div></div><div><p>The SMPS relay or the LEDs on the front panel does not work when connecting the power cord if the cables are improperly connected or the Main Board or SMPS is not functioning. In this case, check the following:</p><ul style="list-style-type: none">- Check the internal cable connection.- Check the fuses.- Check the output voltages of the SMPS.- Replace the Main Board.</div></div> |
| Troubleshooting Procedures | <div><div></div><div><div><div>①</div><div>Is the AC IN socket connector and the SMPS CN800 connected?</div><div>No</div><div>Insert the AC in connector and the SMPS CN800 connector</div><div>Yes</div></div><div><div>①</div><div>Is the Fuse (F801S) of the SMPS Power Input Part blown?</div><div>Yes</div><div>Replace Fuse (F801S)</div><div>No</div></div><div><div>②</div><div>SMPS CN801 Pin 3 : STB 5V Pin 2 PS-ON : Check to see if it is 0V</div><div>No</div><div>Replace the SMPS</div><div>Yes</div><div>Replace the Main Board</div></div></div></div> |

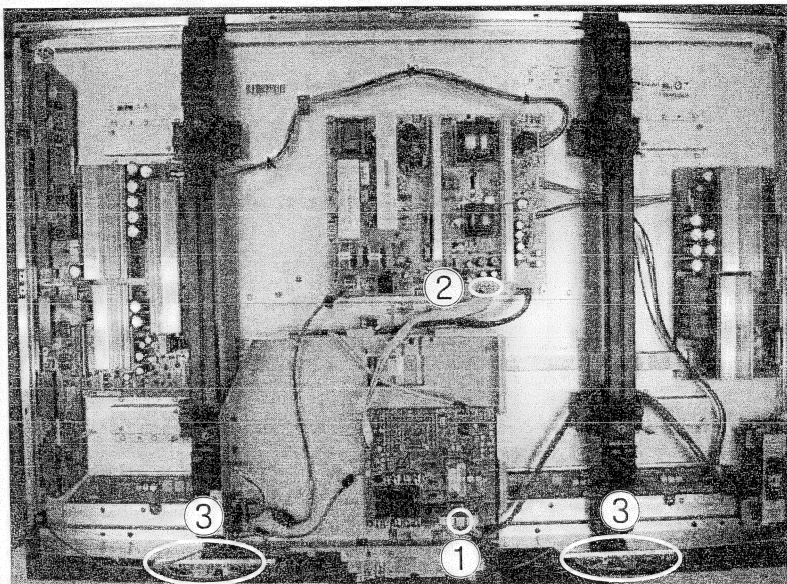
■ When the unit is repeatedly turning on and off

| | |
|----------------------------|--|
| Symptom | - The SMPS relay is repeatedly turning on and off. |
| Major Checklist | <p>In general, the SMPS relay repeatedly turns on and off by the protection function due to a defect on a board connected to the SMPS.</p> <ul style="list-style-type: none"> - Disconnect all cables from the SMPS, operate the SMPS alone and check if the SMPS works properly and if each voltage output is correct. - If the symptom continues even when SMPS is operated alone, replace the SMPS. - If the symptom is not observed when operating the SMPS alone, find any defective assemblies by connecting the cables one by one. |
| Troubleshooting Procedures |  <pre> graph TD Q1["① Does the symptom continue when connecting the power after removing CN810 from the SMPS?"] Q2["② Does the symptom continue when connecting the power after removing CN809 from the SMPS?"] Q3["③ Does the symptom continue when connecting the power after removing CN807 from the SMPS?"] R1["Replace the Y Main Board"] R2["Replace the X Main Board"] R3["Replace the Logic Board"] R4["Replace the SMPS"] Q1 -- No --> R1 Q1 -- Yes --> Q2 Q2 -- No --> R2 Q2 -- Yes --> Q3 Q3 -- No --> R3 Q3 -- Yes --> R4 </pre> |
| Caution | <p>WHEN SEPARATING AND CONNECTING THE CABLES SUCH AS CN810, CN809, CN808, CN807 OF THE MAIN SMPS, CN4701 OF THE X MAIN BOARD, AND CN5707 OF THE Y MAIN BOARD, A SPARK MAY BE GENERATED BY THE ELECTRIC CHARGE OF THE HIGH CAPACITY CAPACITOR. THEREFORE, WAIT SOME TIME AFTER DISCONNECTING THE POWER CORD FROM THE UNIT.</p> |

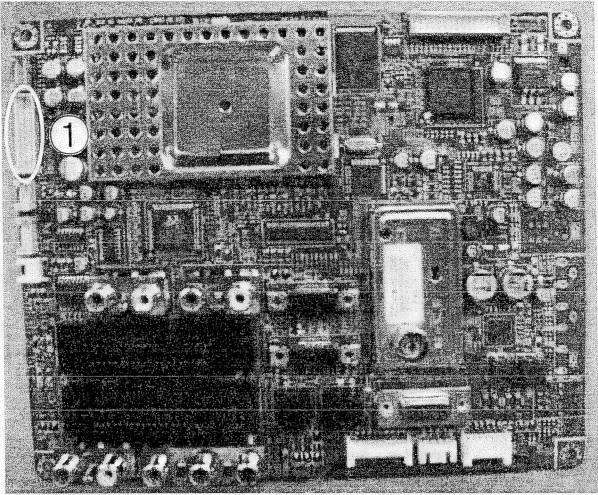
■ No Picture (When audio is normal)

| | |
|----------------------------|--|
| Symptom | - Audio is normal but no picture is displayed on the screen. |
| Major Checklist | <ul style="list-style-type: none"> - This may happen when the Main Board is functioning but the X, Y Main Board, Logic Board, or Y Buffer Boards are not. - The output voltage of the Main SMPS. - This may happen when the LVDS cable connecting the Main Board and the Logic Board is disconnected. |
| Troubleshooting Procedures |  <pre> graph TD Q1[Are the Vs and Va voltages normal after removing all cables from the SMPS? (CN810, CN809, CN808, CN807)] -- No --> A1[Replace the SMPS] Q1 -- Yes --> Q2[Did problem improve?] Q2 -- No --> A2[Replace the Y Main Board] Q2 -- Yes --> Q3[Did problem improve?] Q3 -- No --> A3[Replace the X Main Board] Q3 -- Yes --> Q4[Did problem improve?] Q4 -- No --> A4[Replace the Logic Board] Q4 -- Yes --> Q5[Did problem improve?] Q5 -- No --> A5[Replace the Y Scan Board] </pre> |
| Caution | WHEN SEPARATING AND CONNECTING THE CABLES SUCH AS CN810, CN809, CN808, CN807 OF THE MAIN SMPS, CN4701 OF THE X MAIN BOARD, AND CN5707 OF THE Y MAIN BOARD, A SPARK MAY BE GENERATED BY THE ELECTRIC CHARGE OF THE HIGH CAPACITY CAPACITOR. THEREFORE, WAIT SOME TIME AFTER DISCONNECTING THE POWER CORD FROM THE UNIT. |

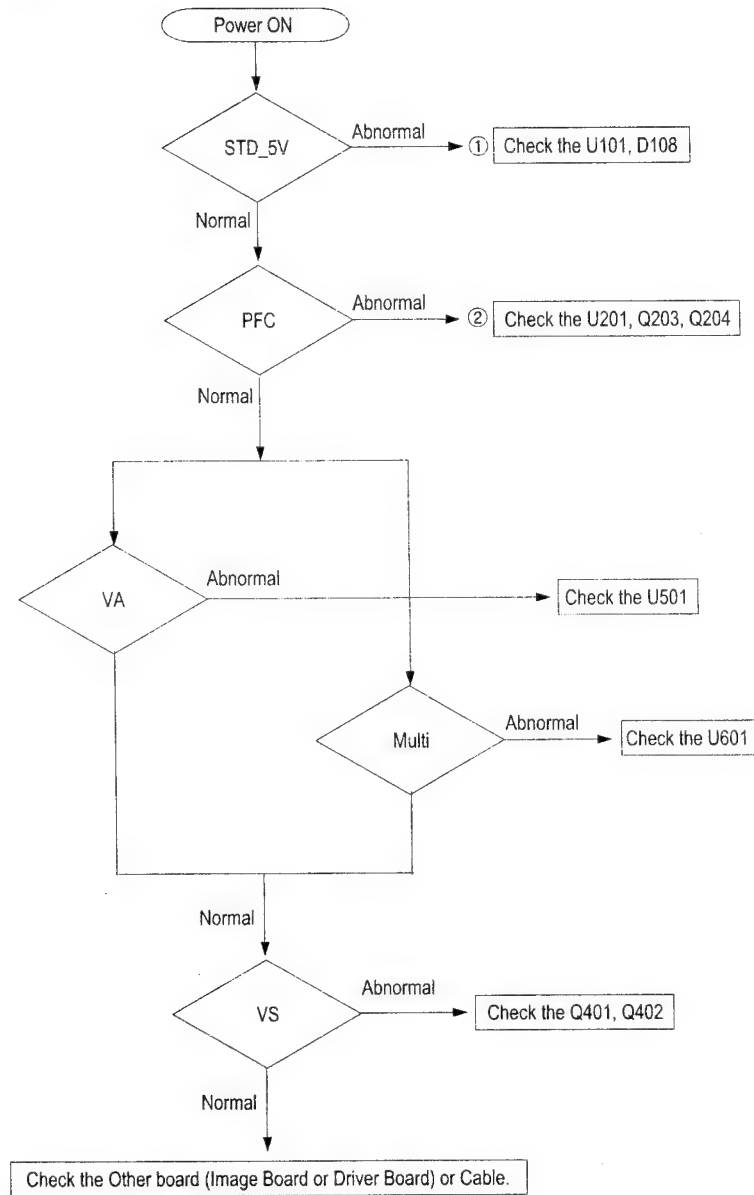
■ No Sound

| | |
|----------------------------|--|
| Symptom | - Video is normal but there is no sound. |
| Major Checklist | <ul style="list-style-type: none"> - When the speaker connectors are disconnected or damaged. - When the sound processing part of the Main Board is not functioning. - Speaker defect. |
| Troubleshooting Procedures |  <pre> graph TD Q1["① Is the cable connection between the Main Board and the speaker properly connected?"] Q2["② Is the output voltage of SMPS normal? (CN801 #13)"] Q3["Is the speaker output terminal of the Main Board normal?"] A1["Connect the cable properly or replace the cable, if necessary."] A2["Replace the SMPS"] A3["Replace the Main Board"] A4["③ Replace the Speaker"] Q1 -- No --> A1 Q1 -- Yes --> Q2 Q2 -- No --> A2 Q2 -- Yes --> Q3 Q3 -- No --> A3 Q3 -- Yes --> A4 </pre> |

■ No Video

| | |
|----------------------------|---|
| Symptom | - A normal/cable network analog broadcast screen is blank or abnormal but OSD is OK. |
| Major Checklist | <ul style="list-style-type: none">- Check the antenna connection settings (Air: NTSC / ATSC, Cable: NTSC)- Check the CVBS cable connection.- Check the power input of the Main board. |
| Troubleshooting Procedures | <div><p>The image shows a main board with various components. A small component on the left side is circled and labeled with the number 1.</p></div> <div><p>Is the antenna connection setting properly configured?</p><p>No → Configure properly</p><p>Yes → ① Check CN101 pin2 for +33V</p><p>No → Replace the SMPS</p><p>Yes → Replace the Main Board</p></div> |

■ SMPS Troubleshooting



■ Drive Board Troubleshooting

1) Troubleshooting Summary

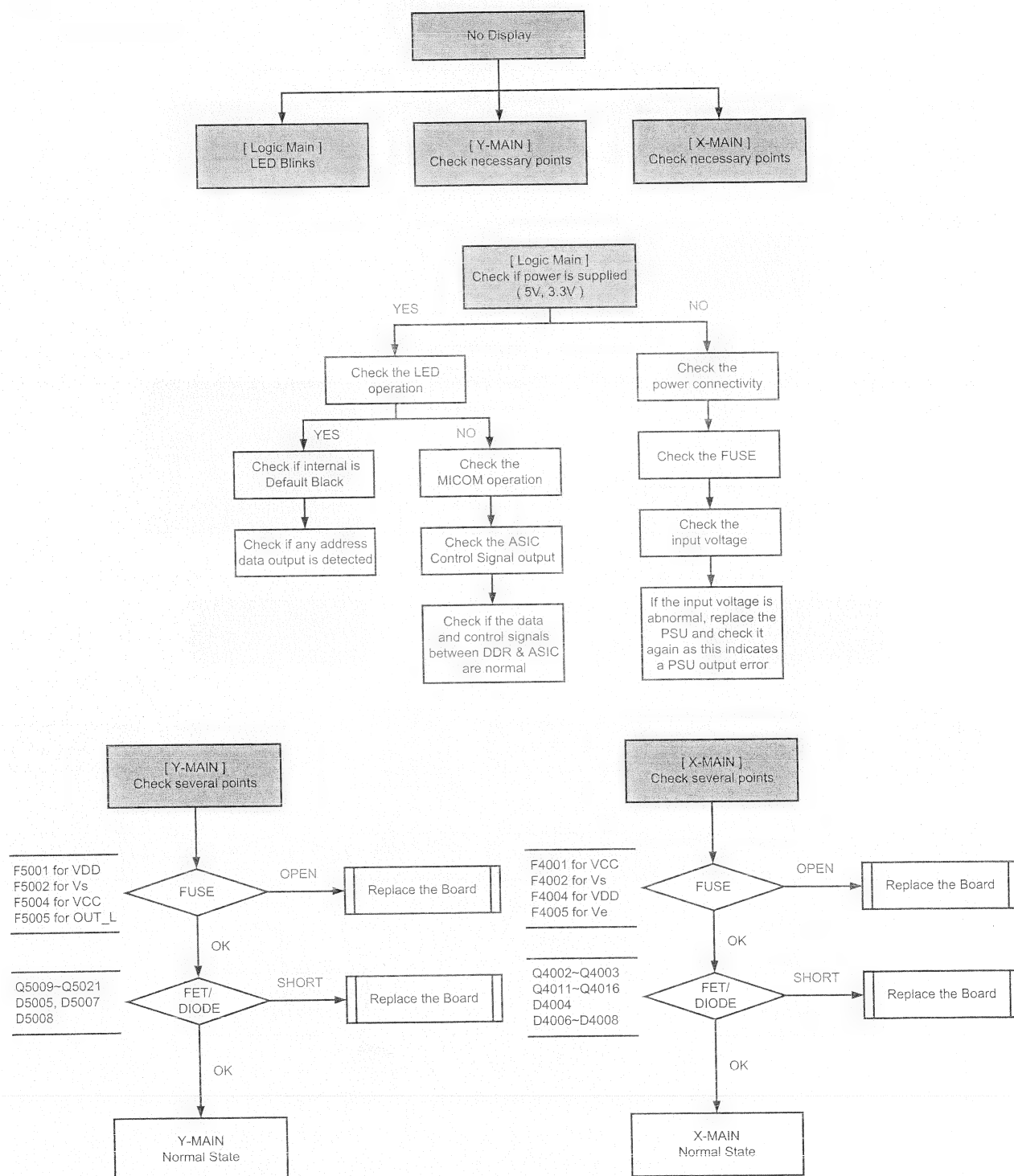
| Condition Name | Description | Related Board |
|-------------------|---|-----------------------------------|
| No Voltage Output | Operating Voltage don't exist | PSU |
| No Display | Operating Voltage exist, but an Image doesn't exist on screen | Y-MAIN, X-MAIN, Logic Main, Cable |
| Abnormal Display | Abnormal Image (not open or short) is no screen | Y-MAIN, X-MAIN, Logic Main |
| Sustain Open | Some horizontal lines don't exist on screen | Scan Buffer, FPC of X/Y |
| Sustain Short | Some horizontal lines appear to be linked on screen | Scan Buffer, FPC of X/Y |
| Address Open | Some vertical lines don't exist on screen | Logic Main, Logic Buffer, TCP |
| Address Short | Some vertical lines appear to be linked on screen | Logic Main, Logic Buffer, TCP |

2) Troubleshooting Procedure in Abnormal Conditions

① No Display

- No Display is related with Y-MAIN, X-MAIN, Logic Main and so on.

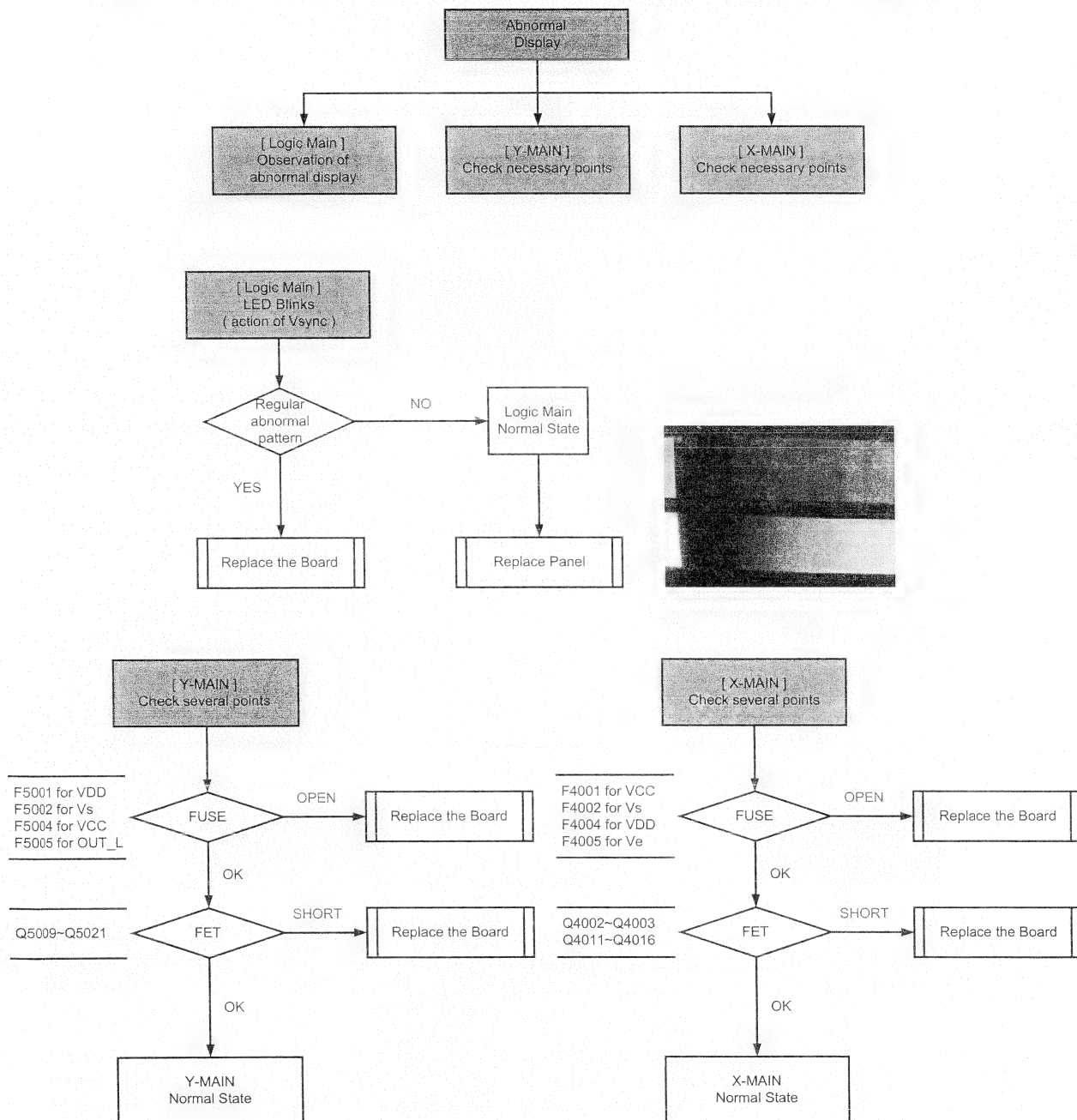
This page shows you how to check the boards, and the following pages show you how to find the defective board.



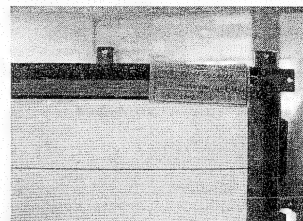
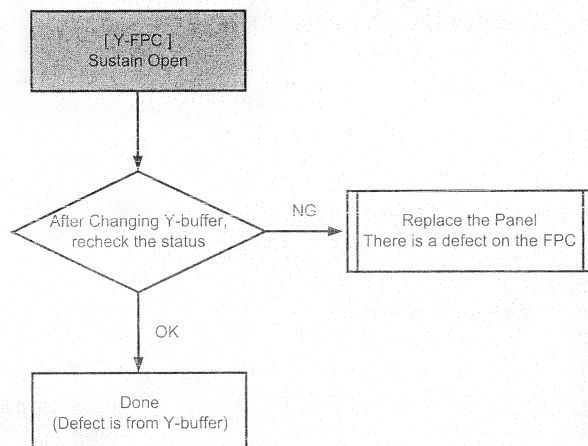
② Abnormal Display(Abnormal Image is on Screen.(except abnormality in Sustain or Address))

- Abnormal Display is related with Y-MAIN, X-MAIN, Logic Main and so on.

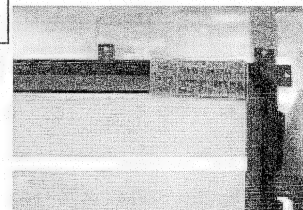
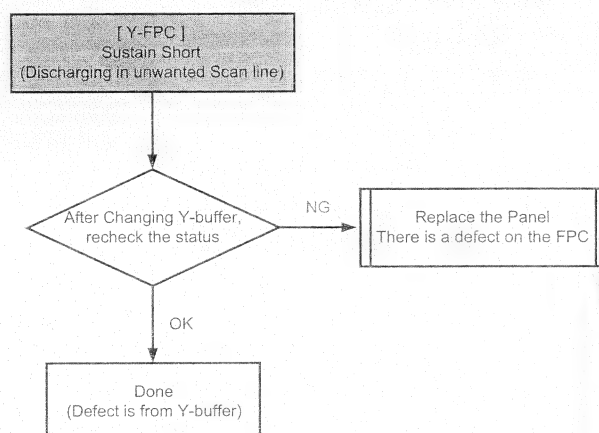
This page shows you how to check the boards, and the following pages show you how to find the defective board.



③ Sustain Open (some horizontal lines don't exist on screen)



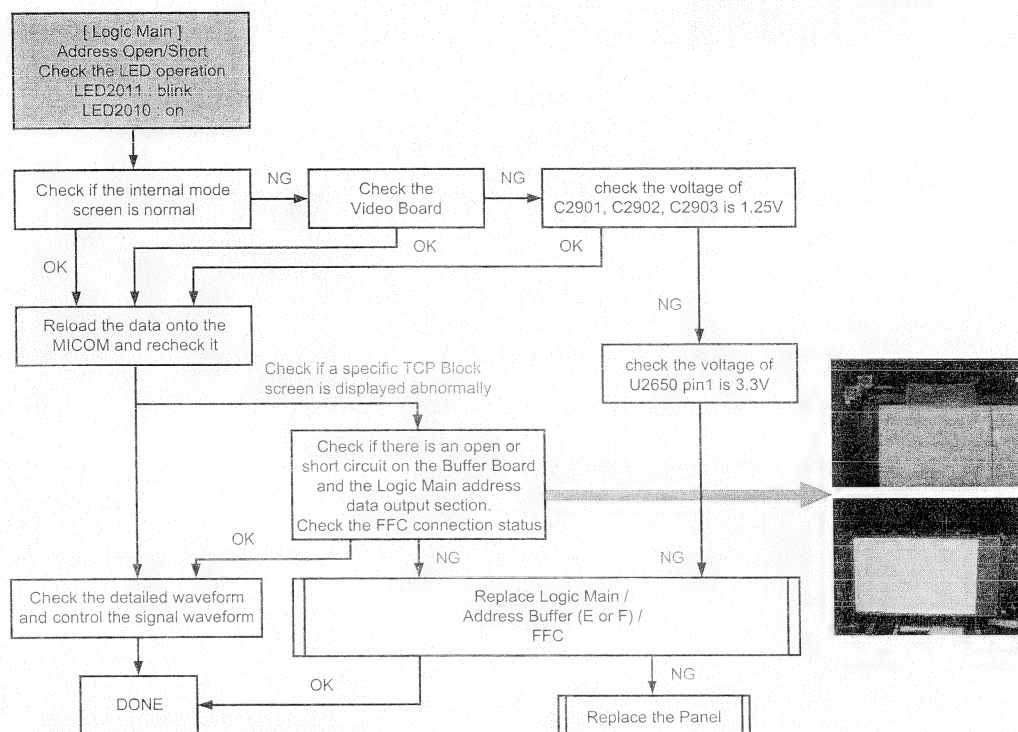
④ Sustain Short (some horizontal lines appear to be linked on Video)



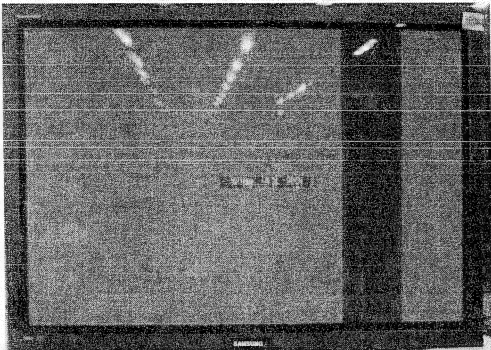
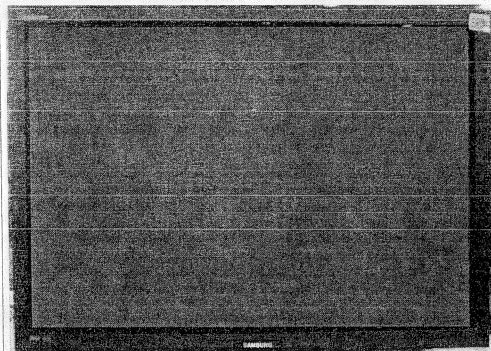
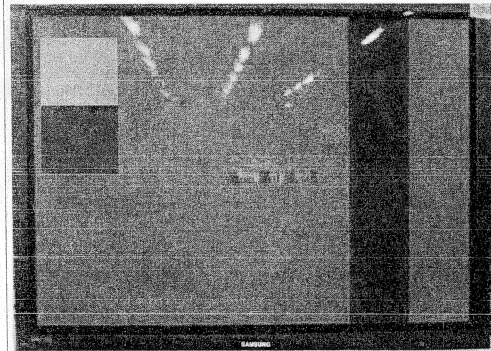
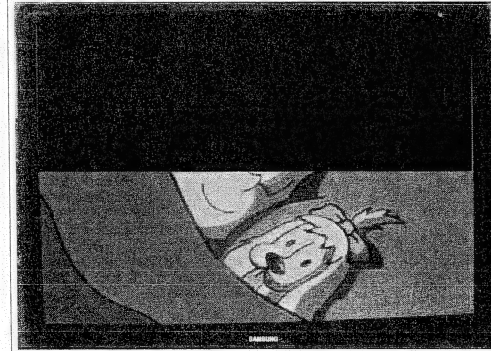
⑤ Address Open, Short

► Address Open and Short is related with Logic Main, Logic Buffer, FFC, TCP film and so on.

This page shows you how to check the boards, and the following pages show you how to find the defective board.



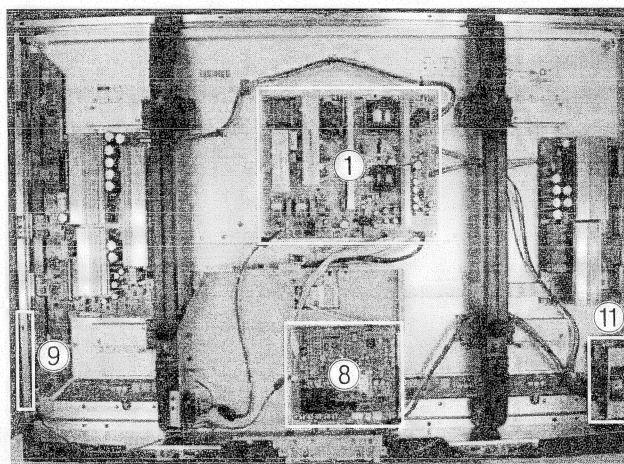
4-1-3 Faults and Corrective Actions

| Symptom | Related Image | Causes and Countermeasures |
|---|--|--|
| A blank vertical cell (block) appears on the screen. |  | <p>Address buffer defect</p> <ul style="list-style-type: none"> - Replace the corresponding upper/lower buffers (E, F) <p>COF defect (burnt)</p> <ul style="list-style-type: none"> - Replace the module |
| A green screen appears when the TV is turned on. |  | <p>The Scale is not resetting</p> <ul style="list-style-type: none"> - Replace the Main board |
| The OSD box appears but there is no text. |  | <p>Incorrect program version</p> <ul style="list-style-type: none"> - Check the version of each program - Replace the Main board |
| A blank upper (or lower) block appears on the screen. |  | <p>Upper/Lower Y Buffer defect</p> <ul style="list-style-type: none"> - Replace the corresponding upper/lower buffers (E, F) |

| Symptom | Related Image | Causes and Countermeasures |
|---|--|---|
| Either the main or sub picture does not appear. |  | Replace the Main board |
| A vertical green line appears on the screen. |  | The SMPS voltage is incorrect - Adjust the SMPS voltage according to the voltage printed on the module label |
| Dim screen (blurred in red) |  | X-Main board defect - Replace the X-Main board |
| A blank screen appears |  | - Replace the Y-Main board |

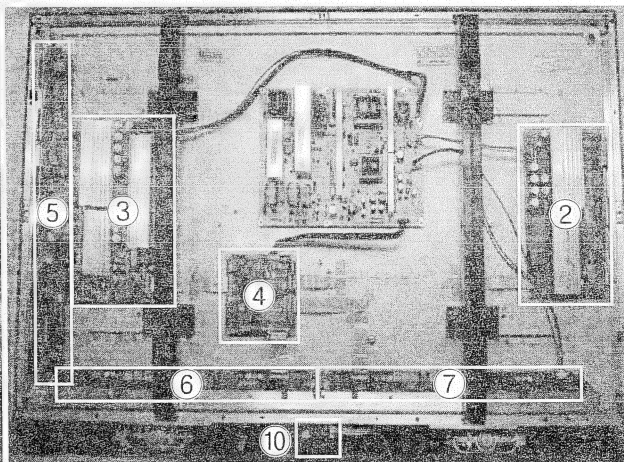
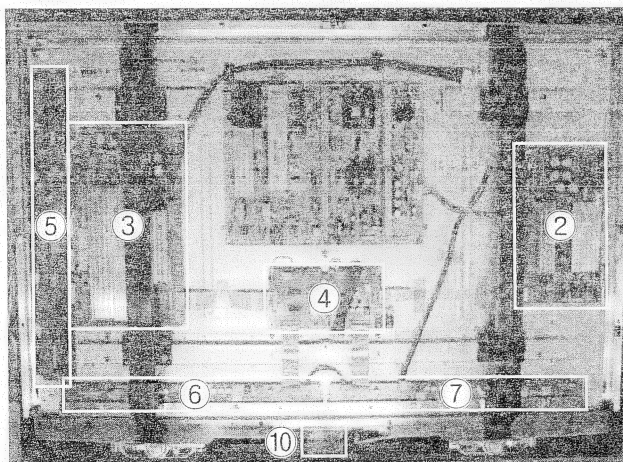
4-1-4 Troubleshooting Procedures by assembly

| No | Assembly | Major Symptoms |
|----|--------------------------------------|--|
| 1 | SMPS-PDP TV | No power, Blank screen, the Relay repeats On and Off. |
| 2 | ASSY PDP MODULE P-X-MAIN | Blank screen |
| 3 | ASSY PDP MODULE P-Y-MAIN | Blank screen |
| 4 | ASSY PDP MODULE P-LOGIC MAIN | Blank screen, Screen noise |
| 5 | ASSY PDP MODULE P-Y-MAIN SCAN BUFFER | Row Bar screen is blank |
| 6 | ASSY PDP MODULE P-ADDRESS E BUFFER | Corresponding Buffer Board block screen is blank. |
| 7 | ASSY PDP MODULE P-ADDRESS F BUFFER | Corresponding Buffer Board block screen is blank. |
| 8 | ASSY PCB MISC-MAIN | No Power, Abnormal screen for each input source, PIP screen trouble, Sound trouble |
| 9 | ASSY BOARD P-FUNCTION | The side function key does not work properly |
| 10 | ASSY BOARD P-POWER&IR | The remote control does not work properly, the LED does not work properly. |
| 11 | ASSY BOARD P-SIDE AV | The AV2 and S-VIDEO2 modes do not work properly |



<PDP 42">

<PDP 50">



4-2 Adjustment

4-2-1 Service Instruction

■ Before Performing After Sales Services

1. Check if the measurement and test equipment is working properly.
2. Secure sufficient work space for disassembling the product.
3. Prepare a soft pad for disassembling the product.

■ Service adjustment item after replacement of Board

<If adjustment equipment is available>

- ① PDP Option of Factory Mode → set the Factory Data Type item as the suitable value of relevant model.
- ② Adjust Calibration of Factory Mode for each mode.
- ③ Adjust White Balance of Factory Mode.

<If adjustment equipment is not available>

- ① Write down the value of HDMI White Balance of Factory Mode before replacing Board.
- ② PDP Option of Factory Mode → set the Factory Data Type item as the suitable value of relevant model.
- ③ Set the value of HDMI White Balance with the value written down before.

4-2-2 How to Access Service Mode

1. General Remote

To Enter: **POWER OFF** → **INFO** → **MENU** → **MUTE** → **POWER ON**

(Interval between key strokes: less than 3 sec)

To Exit: **POWER OFF** → **POWER ON**

2. Factory Remote

To Enter: **POWER ON** → **INFO** → **FACTORY Key** (Interval between key strokes: less than 3 sec)

To Exit: **POWER OFF** → **POWER ON**

Press the Factory key twice with a key stroke interval of more than 1 second (Pressing once enters Aging Mode)

3. Settings when entering Factory mode

- Sharp Screen (Dynamic), Color Tone (Cool1), Factory (Dynamic CE Off)

4. Adjustment Procedures

- Channel ▲ ▼ Key : Select an item.
- Volume ◀ ▶ Key : Adjust the value up or down.
- MENU Key : Save the changes to the EEPROM and return to the higher-level mode.
- Using the Numeric (0~9) keys, you can select a channel.
- Using the SOURCE key, you can switch AV modes.

5. Initial SERVICE MODE DISPLAY State

| | |
|-----------------------------|-------------------------|
| 1 Calibration | 11 Bus Stop |
| 2 Option Byte XXXXXX XXXXXX | 12 Password 80 80 80 80 |
| 3 W/B | 13 CheckSum |
| 4 W/B Movie | 14 Dynamic Contrast |
| 5 MTK 8202 | 15 Spread Spectrum |
| 6 FBE2 option | 16 Reset |
| 7 Pdp Logic | |
| 8 SOUND | |
| 9 YC Delay | |
| 10 Adjust | |

HDCP Write Success..

T-LIL50PEA-XXXX Month, Date, Year 00:00:00 T-BDPMNSAS-XXXX

Panel On Time(Hour) 0

TV Air 3 0

- ※ The version of the firmware displayed at the bottom of the screen may differ and the firmware is subject to change for the improvement of product functions.
- ※ If you have adjusted the settings in Service Mode, you have to reset the product.

4-2-3 Factory Data ★ The underlined are items applied during the service adjustment. None of the others should be adjusted.

1. Calibration

| ITEM | Data |
|------------------|---------|
| AV Calibration | Success |
| Comp Calibration | Success |
| DTV Calibration | Success |
| HDMI Calibration | Success |

2. Option Byte

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|----------------------|--|------------|--------------------------------|----|----------|----|----------|
| Logic D/L | On/Off | Off | Same as Initial (RF & AV) Data | | | | |
| Data Type | Depending on Module and Fliter | 50"EA SPU | | | | | |
| Gamma | On/Off | Off | | | | | |
| Auto Power | On/Off | On | | | | | |
| Hotel Mode | On/Off | Off | | | | | |
| Shop Mode | On/Off | Off | | | | | |
| High Devi | On/Off | Off | | | | | |
| Carrier Mute | On/Off | Off | | | | | |
| Side Jack | On/Off | On | | | | | |
| V-Chip | On/Off | Flof | | | | | |
| Caption | On/Off | On | | | | | |
| Volume Table | Small/Large | Large | | | | | |
| Sound Wattage | PDP 10W/ PDP 15W/LCD 10W | On | | | | | |
| Initial Color System | Auto/PAL-M/PAL-N/ NTSC-M | Large | | | | | |
| PS Test | Min/Sec | PDP 10W | | | | | |
| Language | English/French/ Spanish Portuguese | Min | | | | | |
| Hp Detect | Active Low/ Active High | English | | | | | |
| PC Ident | On/Off | Active Low | | | | | |
| WM Calib | On/Off | On | | | | | |
| Uart Select | Normal/Debug_DL | Off | | | | | |
| Sub MCU PW Down | On/Off | Debug/DL | | | | | |

3. W/B

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|---------------------|-------|---------|------------|----|----------|----|----------|
| <u>Sub Bright</u> | 0~255 | 128 | Adjustable | | | | |
| <u>Red Offset</u> | 0~255 | 128 | | | | | |
| <u>Green Offset</u> | 0~255 | 128 | 128 | | | | |
| <u>Blue Offset</u> | 0~255 | 128 | Adjustable | | | | |
| <u>Sub Contrast</u> | 0~255 | 128 | | | | | |
| <u>Red Gain</u> | 0~255 | 128 | | | | | |
| <u>Green Gain</u> | 0~255 | 128 | 128 | | | | |
| <u>Blue Gain</u> | 0~255 | 128 | Adjustable | | | | |

4. W/B Movie

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|--------------------|--|---------|-------|-------|----------|-------|----------|
| W/B Movie On/Off | On/Off | Off | Off | Off | Off | Off | Off |
| Service P Mode | Dynamic/Standard /Movie | Movie | Movie | Movie | Movie | Movie | Movie |
| Service Color Tone | Cool2/Cool1/ Normal/Warm1/ Warm2 | Warm2 | Warm2 | Warm2 | Warm2 | Warm2 | Warm2 |
| MSub Brightness | 0~255 | 128 | 128 | 128 | 128 | 128 | 128 |
| Msub Contrast | 0~255 | 128 | 128 | 128 | 128 | 128 | 128 |
| Warm1 Red Gain | 0~255 | 140 | 140 | 140 | 140 | 140 | 140 |
| Warm1 Blue Gain | 0~255 | 105 | 105 | 105 | 105 | 105 | 105 |
| Warm1 Red Offset | 0~255 | 140 | 140 | 140 | 140 | 140 | 140 |
| Warm1 Blue Offset | 0~255 | 100 | 100 | 100 | 100 | 100 | 100 |
| Warm2 Red Gain | 0~255 | 145 | 145 | 145 | 145 | 145 | 145 |
| Warm2 Blue Gain | 0~255 | 90 | 90 | 90 | 90 | 90 | 90 |
| Warm2 Red Offset | 0~255 | 145 | 145 | 145 | 145 | 145 | 145 |
| Warm2 Blue Offset | 0~255 | 90 | 90 | 90 | 90 | 90 | 90 |
| Normal Red Gain | 0~255 | 130 | 130 | 130 | 130 | 130 | 130 |
| Normal Blue Gain | 0~255 | 120 | 120 | 120 | 120 | 120 | 120 |
| Normal Red Offset | 0~255 | 135 | 135 | 135 | 135 | 135 | 135 |
| Normal Blue Offset | 0~255 | 120 | 120 | 120 | 120 | 120 | 120 |
| Cool2 Red Gain | 0~255 | 123 | 123 | 123 | 123 | 123 | 123 |
| Cool2 Blue Gain | 0~255 | 145 | 145 | 145 | 145 | 145 | 145 |
| Cool2 Red Offset | 0~255 | 125 | 125 | 125 | 125 | 125 | 125 |
| Cool2 Blue Offset | 0~255 | 128 | 128 | 128 | 128 | 128 | 128 |
| Mov.Contrast | 0~100 | 80 | 80 | 80 | 80 | 80 | 80 |
| Mov.Brightness | 0~100 | 50 | 50 | 50 | 50 | 50 | 50 |
| Mov.Color | 0~100 | 55 | 55 | 55 | 55 | 55 | 55 |
| Mov.Sharpness | 0~100 | 45 | 45 | 45 | 45 | 45 | 45 |

5-1. MT8202 (Cal. Adjustment)

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|-----------------|-------|---------|----------------------|----|----------|----|----------|
| R_Offset | 0~255 | 34 | Same as Initial Data | | | | |
| G_Offset | 0~255 | 13 | | | | | |
| B_Offset | 0~255 | 24 | | | | | |
| R_Gain | 0~255 | 92 | | | | | |
| G_Gain | 0~255 | 82 | | | | | |
| B_Gain | 0~255 | 82 | | | | | |
| Y_Offset | 0~255 | 21 | | | | | |
| Cb_Offset | 0~255 | 35 | | | | | |
| Cr_Offset | 0~255 | 22 | | | | | |
| Y_Gain | 0~255 | 48 | | | | | |
| Cb_Gain | 0~255 | 48 | | | | | |
| Cr_Gain | 0~255 | 48 | | | | | |
| CVBS Offset | 0~255 | 54 | | | | | |
| CVBS Gain | 0~255 | 49 | | | | | |
| CVBS U | 0~255 | 0 | | | | | |
| CVBS V | 0~255 | 0 | | | | | |
| R Offset After | 0~255 | 129 | | | | | |
| G Offset After | 0~255 | 129 | | | | | |
| B Offset After | 0~255 | 129 | | | | | |
| Red Gain | 0~255 | 159 | | | | | |
| Green Gain | 0~255 | 159 | | | | | |
| Blue Gain | 0~255 | 159 | | | | | |
| R Offset Before | 0~255 | 113 | | | | | |
| G Offset Before | 0~255 | 113 | | | | | |
| B Offset Before | 0~255 | 113 | | | | | |
| LVDS Control | 0~255 | 55 | | | | | |

5-2. MT8202 (Cal. Target)

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|-----------------------|-------|---------|----------------------|----|----------|----|----------|
| AV_Offset Target | 0~255 | 15 | Same as Initial Data | | | | |
| AV_Offset Delta | 0~255 | 1 | | | | | |
| AV_Gain Target | 0~255 | 220 | | | | | |
| AV_Gain Delta | 0~255 | 3 | | | | | |
| Comp_Y_Gain Target | 0~255 | 235 | | | | | |
| Comp_Y_Gain Delta | 0~255 | 3 | | | | | |
| Comp_Y_Offset Target | 0~255 | 16 | | | | | |
| Comp_Pb_Offset Target | 0~255 | 128 | | | | | |
| Comp_Pr_Offset Target | 0~255 | 128 | | | | | |
| Comp_Y_Offset Delta | 0~255 | 2 | | | | | |
| Comp_Pb_Offset Delta | 0~255 | 0 | | | | | |
| Comp_Pr_Offset Delta | 0~255 | 0 | | | | | |
| PC_Offset Target | 0~255 | 1 | | | | | |
| PC_Offset Delta | 0~255 | 0 | | | | | |
| PC_Gain Target | 0~255 | 254 | | | | | |
| PC_Gain Delta | 0~255 | 0 | | | | | |
| Black Target | 0~255 | 1 | | | | | |
| White Target | 0~255 | 235 | | | | | |

5-3. MT8202 (Picture Enhance2)

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|---------------|-------|---------|----|----|----------|----|----------|
| PreLGain_Main | 0~191 | 64 | 64 | 64 | 64 | 64 | 64 |
| PreMGain_Main | 0~191 | 64 | 64 | 64 | 64 | 64 | 64 |
| PreHGain_Main | 0~191 | 76 | 76 | 76 | 76 | 76 | 76 |
| PreLGain_Sub | 0~191 | 64 | 64 | 64 | 64 | 64 | 64 |
| PreMGain_Sub | 0~191 | 64 | 64 | 64 | 64 | 64 | 64 |
| PreHGain_Sub | 0~191 | 76 | 76 | 76 | 76 | 76 | 76 |
| LocalLGain | 0~191 | 72 | 72 | 72 | 72 | 72 | 72 |
| LocalMGain | 0~191 | 64 | 64 | 64 | 64 | 64 | 64 |
| LocalHGain | 0~191 | 64 | 64 | 64 | 64 | 64 | 64 |
| PostLGain | 0~191 | 96 | 96 | 96 | 96 | 96 | 96 |
| PostMGain | 0~191 | 96 | 96 | 96 | 96 | 96 | 96 |
| PostHGain | 0~191 | 64 | 64 | 64 | 64 | 64 | 64 |
| Vgain | 0~191 | 20 | 20 | 20 | 20 | 20 | 20 |
| Sub Color | 0~100 | 30 | 30 | 30 | 30 | 30 | 30 |

6. FBE2 Option

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|----------------|--------|---------|-----|-----|----------|-----|----------|
| Patt-Sel | 0~20 | 0 | 0 | 0 | 0 | 0 | 0 |
| B-Slope gain | 0~255 | 64 | 64 | 64 | 64 | 64 | 64 |
| B-Tilt min | 0~255 | 20 | 20 | 20 | 20 | 20 | 20 |
| B-Tilt max | 0~255 | 120 | 120 | 120 | 120 | 120 | 120 |
| Lfunc-Basis | 0~255 | 75 | 75 | 75 | 75 | 75 | 75 |
| Hfunc-Basis | 0~255 | 88 | 88 | 88 | 88 | 88 | 88 |
| Mean-Offset1 | 0~255 | 64 | 64 | 64 | 64 | 64 | 64 |
| Mean-Offset2 | 0~255 | 235 | 235 | 235 | 235 | 235 | 235 |
| Mean-Slope | 0~255 | 93 | 93 | 93 | 93 | 93 | 93 |
| Input-offset | 0~255 | 128 | 128 | 128 | 128 | 128 | 128 |
| ACR-Offset | 0~127 | 25 | 25 | 25 | 25 | 25 | 25 |
| ACR-Th1 | 0~255 | 20 | 20 | 20 | 20 | 20 | 20 |
| ACR-Th2 | 0~255 | 120 | 120 | 120 | 120 | 120 | 120 |
| Skin-Enable | On/Off | On | On | On | On | On | On |
| Skin-Tu | 0~255 | 128 | 128 | 128 | 128 | 128 | 128 |
| Skin-Tv | 0~255 | 128 | 128 | 128 | 128 | 128 | 128 |
| M-Skin-Tu | 0~255 | 128 | 128 | 128 | 128 | 128 | 128 |
| M-Skin-Tv | 0~255 | 128 | 128 | 128 | 128 | 128 | 128 |
| Sub Color | 0~255 | 135 | 135 | 135 | 135 | 135 | 135 |
| M-Au-Sub Color | 0~255 | 128 | 128 | 128 | 128 | 128 | 128 |
| M-Wi-Sub Color | 0~255 | 128 | 128 | 128 | 128 | 128 | 128 |
| MW-Skin-Tu | 0~255 | 128 | 128 | 128 | 128 | 128 | 128 |
| MW-Skin-Tv | 0~255 | 128 | 128 | 128 | 128 | 128 | 128 |

7. Pdp Logic

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|------------------|-----------|---------|-----|-----|----------|-----|----------|
| Pattern Select | 0~31 | 0 | 0 | 0 | 0 | 0 | 0 |
| CDC Sw | On/Off | Off | Off | Off | Off | Off | Off |
| CDC Strength Th | 0~31 | 10 | 10 | 10 | 10 | 10 | 10 |
| BRE Sw | On/Off | Off | Off | Off | Off | Off | Off |
| FRC Repeat Mode | On/Off | Off | Off | Off | Off | Off | Off |
| FRC DBG MarkOn | 0~15 | 0 | 0 | 0 | 0 | 0 | 0 |
| FRC Bypass | On/Off | Off | Off | Off | Off | Off | Off |
| CDC Lower Gain | 0~31 | 4 | 4 | 4 | 4 | 4 | 4 |
| CDC Upper Gain | 0~31 | 6 | 6 | 6 | 6 | 6 | 6 |
| Panel Type | Read Only | | | | | | |
| Panel Inch | Read Only | | | | | | |
| Panel Version | Read Only | | | | | | |
| Logic Sw Version | Read Only | | | | | | |
| Panel Temp | Read Only | | | | | | |

8. SOUND

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|-------------------|--------------------------|---------|----------------------|----|----------|----|----------|
| AM Mute Th_High | 0~20 | 7 | Same as Initial Data | | | | |
| AM Mute Th_Low | 0~20 | 8 | | | | | |
| FM Mute Th_High | 0~96 | 14 | | | | | |
| FM Mute Th_Low | 0~96 | 7 | | | | | |
| NICAM Fine Vol | 0~40 | 20 | | | | | |
| FM Fine Vol | 0~40 | 20 | | | | | |
| AM Fine Vol | 0~40 | 19 | | | | | |
| Fine Tune Vol | 0~40 | 20 | | | | | |
| SC1 Fine Vol | 0~40 | 20 | | | | | |
| SC2 Fine Vol | 0~40 | 20 | | | | | |
| Output Matrix | Bypass/L_Mono/ R_Mono | Bypass | | | | | |
| MTS Num of Check | 0~80 | 50 | | | | | |
| MTS Pilot Num | 0~50 | 35 | | | | | |
| MTS Pilot Low | 64~137 | 112 | | | | | |
| MTS Pilot High | 89~160 | 128 | | | | | |
| MTS SAP Num | 0~50 | 20 | | | | | |
| MTS SAP Low | 69~132 | 101 | | | | | |
| MTS SAP High | 101~202 | 167 | | | | | |
| MTS SAP Mute Lvl | 0~100 | 0 | | | | | |
| MTS Fine Vol | 0~40 | 20 | | | | | |
| MTS SAP Fine Vol | 0~40 | 20 | | | | | |
| FM Mute Th_H HDev | 0~150 | 57 | | | | | |
| FM Mute Th_L Hdev | 0~150 | 38 | | | | | |
| Speaker EQ | On/Off | On | | | | | |

9. YC Delay

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|---------------|-------|---------|----------------------|----|----------|----|----------|
| RF PAL-B/G | 0~10 | 6 | Same as Initial Data | | | | |
| RF PAL-D/K | 0~10 | 5 | | | | | |
| RF PAL-I | 0~10 | 5 | | | | | |
| RF PAL-L/L' | 0~10 | 5 | | | | | |
| RF SECAM-B/G | 0~10 | 7 | | | | | |
| RF SECAM-D/K | 0~10 | 5 | | | | | |
| RF SECAM-I | 0~10 | 5 | | | | | |
| RF SECAM-L/L' | 0~10 | 5 | | | | | |
| RF NTSC3.58 | 0~10 | 5 | | | | | |
| RF NTSC4.43 | 0~10 | 6 | | | | | |
| RF PAL-M | 0~10 | 7 | | | | | |
| RF PAL-N | 0~10 | 5 | | | | | |
| AV PAL | 0~10 | 6 | | | | | |
| AV SECAM | 0~10 | 7 | | | | | |
| AV NTSC3.58 | 0~10 | 6 | | | | | |
| AV NTSC4.43 | 0~10 | 6 | | | | | |
| AV PAL60 | 0~10 | 5 | | | | | |
| AV PAL-M | 0~10 | 7 | | | | | |
| AV PAL-N | 0~10 | 5 | | | | | |

10-1. Adjust (User Control Unit)

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|-------------------|--------------------------|---------|----------------------|----|----------|----|----------|
| TTX PWM | 0~255 | 30 | Same as Initial Data | | | | |
| Dyn. Contrast | 0~255 | 100 | | | | | |
| Dyn. Brightness | 0~255 | 45 | | | | | |
| Dyn. Color | 0~255 | 55 | | | | | |
| Dyn. Sharpness | 0~255 | 75 | | | | | |
| Std. Contrast | 0~255 | 80 | | | | | |
| Std. Brightness | 0~255 | 50 | | | | | |
| Std. Color | 0~255 | 55 | | | | | |
| Std. Sharpness | 0~255 | 50 | | | | | |
| Melody Volume | 0~100 | 20 | | | | | |
| Brightness Center | 0~55 | 38 | | | | | |
| Contrast Gain | 0~255 | 64 | | | | | |
| MTK_Dyn. Contrast | On/Off | Off | | | | | |
| DSP Recovery | On/Off | On | | | | | |
| Channel Table | Suwon/Sesk/SEH/ TTSEC | SUWON | | | | | |
| Video Mute Time | 0~10 | 5 | | | | | |
| Sound Delay | 0~70 | 0 | | | | | |

10-2. Adjust (LNA Plus)

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|------------|--------|---------|----------------------|----|----------|----|----------|
| LNA PLUS | On/Off | On | Same as Initial Data | | | | |
| RF_dB0_TH | 0~255 | 5 | | | | | |
| RF_dB1_TH | 0~255 | 15 | | | | | |
| RF_dB2_TH | 0~255 | 43 | | | | | |
| RF_dB3_TH | 0~255 | 64 | | | | | |
| NR1_Coring | 0~255 | 16 | | | | | |
| NR2_Coring | 0~255 | 32 | | | | | |
| NR3_Coring | 0~255 | 32 | | | | | |
| NR4_Coring | 0~255 | 32 | | | | | |

10-3. Adjust (Hotel Option)

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|------------------|--|---------|----------------------|----|----------|----|----------|
| Power On Channel | 0~100 | 3 | Same as Initial Data | | | | |
| Power On Band | AIR/STD/HRC/IRC | AIR | | | | | |
| Power On Volume | 0~100 | 10 | | | | | |
| Max Volume | 0~100 | 100 | | | | | |
| Local Key Lock | On/Off | Off | | | | | |
| Power On Source | TV/AV1/AV2/ S-Video/Componet1/ Component2/PC/ HDMI1/HDMI2 | TV | | | | | |

10-4. Adjust (HDMI)

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|---------------|--------|---------|----------------------|----|----------|----|----------|
| Hot Plug | On/Off | On | Same as Initial Data | | | | |
| Clock Control | On/Off | On | | | | | |
| Hot Plug Dly | 3~50 | 9 | | | | | |

11. Bus Stop

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|-----------|--------|---------|----------------------|----|----------|----|----------|
| Main Loop | On/Off | Off | Same as Initial Data | | | | |
| Eeprom | On/Off | Off | | | | | |
| Tuner | On/Off | Off | | | | | |
| Normal | On/Off | Off | | | | | |
| Watch Dog | On/Off | On | | | | | |

12. Password 80 80 80 80

13. CheckSum 91A8

14. Dynamic Contrast

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|-----------------|--------|---------|----------------------|----|----------|----|----------|
| Dynamic | On/Off | Off | Same as Initial Data | | | | |
| Dynamic Dimming | On/Off | Off | | | | | |
| FBE Y_MEAN Read | - | 100 | Read Only | | | | |

15. Spread Spectrum

| ITEM | Range | Initial | RF | AV | Componet | PC | HDMI/DVI |
|-----------------|-------------|---------|------------------------------|----|----------|----|----------|
| Spread Spectrum | On/Off | Off | Fixed Value about each mode. | | | | |
| Step 480i/576i | 0~255 | 40 | | | | | |
| Rang 480i/576i | 0~255 | 50 | | | | | |
| Step 480p/576p | 0~255 | 30 | | | | | |
| Rang 480p/576p | 0~255 | 50 | | | | | |
| Step 720p | 0~255 | 30 | | | | | |
| Rang 720p | 0~255 | 40 | | | | | |
| Step 1080i | 0~255 | 30 | | | | | |
| Rang 1080i | 0~255 | 45 | | | | | |
| Step 640*480 | 0~255 | 40 | | | | | |
| Rang 640*480 | 0~255 | 50 | | | | | |
| Step 800*600 | 0~255 | 40 | | | | | |
| Rang 800*600 | 0~255 | 55 | | | | | |
| Step 1024*768 | 0~255 | 40 | | | | | |
| Rang 1024*768 | 0~255 | 55 | | | | | |
| Step 1360*768 | 0~255 | 40 | | | | | |
| Rang 1360*768 | 0~255 | 55 | | | | | |
| FBE_Spectrum | 1/2/3/4/Off | 2 | | | | | |

16. Reset

4-2-4 Service Adjustment

■ White Balance - Calibration

If picture color is wrong, do calibration first.

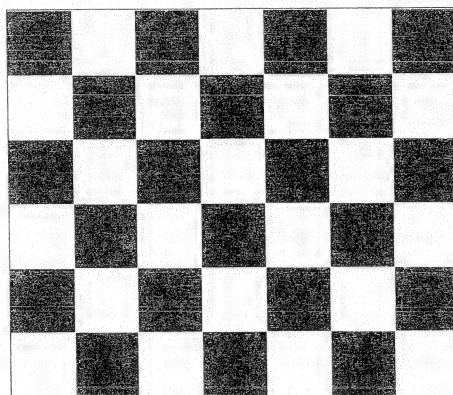
Execute calibration in Factory Mode

1. Source : VIDEO
2. Setting Mode : PAL Video (MODE : #2)
3. Pattern : Pattern #24 (Chess Pattern)
4. Use Equipment : MSPG945 Series or MSPG925 Series
5. Work order
 - 1) Enter by Factory Mode select "1. CALIBRATION".
 - 2) Select "AV CALIBRATION" again in CALIBRATION MENU.
 - 3) After Completing Calibration, come out "Av success". OSD on the screen (bottom-side) for about 3 seconds.

Source AV : PAL composite, Component : 1280*720/60Hz(720P)

PC : 42" - 1024*768/60Hz

50" - 1360*768/60Hz



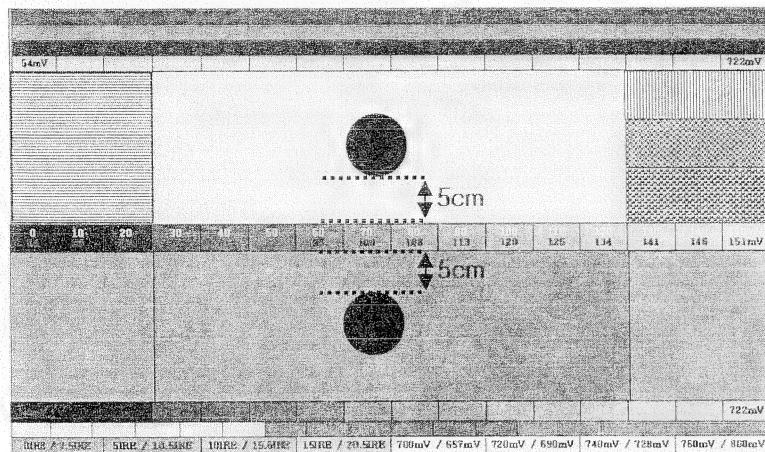
(Chess Pattern)

■ White Balance - Adjustment

If picture color is wrong, check White Balance condition.

Equipment : CA210, Patten : Toshiba
Adjust W/B in Factory Mode

Sub brightness and R/G/B Offset controls low light region
Sub contrast and R/G/B Gain controls high light region
Source AV : PAL composite, Component : 1280*720/60Hz,
HDMI[DVI] : 1280*720/60Hz



(SAMSUNG WHITE BALANCE Adjustment PATTERN with FPD)

[Test Pattern : MSPG-945 Series Pattern #16]

* Color temperature
1500K \pm 500, -6 ~ -20 MPCD

* Color coordinate
H/L : 278/285 \pm 2
L/L : 278/285 \pm 3, 1.9ft \pm 0.05ft
(This Data will be able to be changed according to Picture quality Setting, Please refer to latest data from Factory.)

■ Conditions for Measurement

- On the basis of toshiba ABL pattern : High Light level (57 IRE)
 - INPUT SIGNAL GENERATOR : MSPG-925SM or MSPG-945FS
 - * MODE No 2 : 744*484@60Hz
 - No 6 : 1280*720@60Hz(720P)
 - No 21 : 1024*768
 - * Pattern No 36 : 16 Color Pattern
 - No 16 : Toshiba ABL Pattern
 - No 24 : Chessboard Calibration
 - No 92 : Flat W/B Pattern
- Optical measuring device : CA210 (FL)
Please use the MSPG Series LTH generator for model PS-42C91H, PS-50C91H.

Method of Adjustment

1. Adjust the white balance of AV, Component and DVI Modes.

(AV → Component)

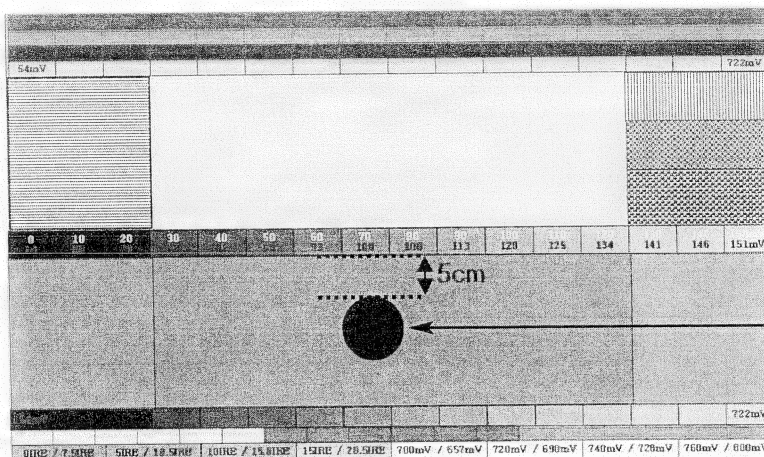
a) Set the input to the mode in which the adjustment will be made (RF → DTV → PC → DVI).

- * Input signal - VIDEO Mode : Model #2 (744*484 Mode), Pattern #92
- DTV, DVI Mode : Model #6 (1280*720 Mode), Pattern #92
- HDMI Mode : Model #6 (1280*720 Mode), Pattern #92

b) Enter factory color control, confirm the data.

c) Adjust the low light. (Refer to table 1, 2 in adjustment position by mode)

- Adjust sub - Brightness to set the 'Y' value.
- Adjust red offset ('x') and blue offset ('y') to the color coordinates.



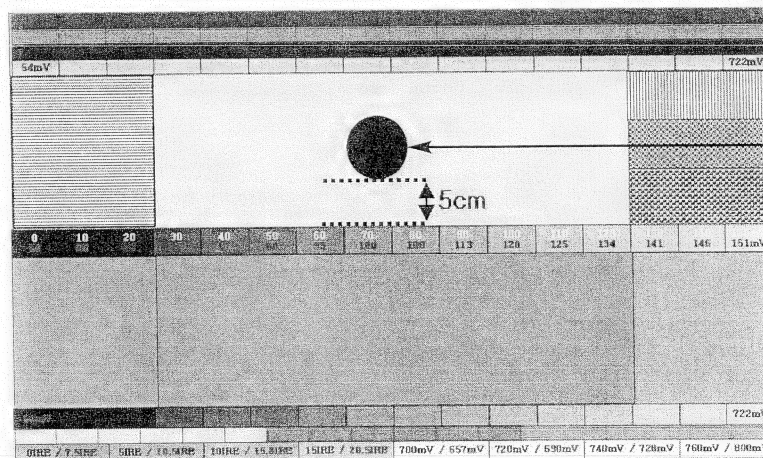
Low light
Measurement point

(SAMSUNG WHITE BALANCE Adjustment PATTERN with FPD)

* Do not adjust green offset data.

d) Adjust the high light. (Refer to table 1, 2 in adjustment position by mode)

- Adjust red gain ('x') and blue gain ('y') to the color coordinates.



High light
Measurement point

(SAMSUNG WHITE BALANCE Adjustment PATTERN with FPD)

* Do not adjust the green gain and sub-contrast (Y) data.

4-2-5 Replacements & Calibration

* PDP 42" Check items listed after changing each

| Replaced assembly items | Check Items |
|--------------------------------------|--|
| ASSY PCB MISC-MAIN | 1) Auto Program 2) White Balance Adjust |
| SMPS-PDP TV | Vs, Va voltage check and adjust |
| ASSY PDP MODULE P-LOGIC MAIN | Not to be adjusted |
| ASSY PDP MODULE P-X-MAIN | |
| ASSY PDP MODULE P-Y-MAIN | |
| ASSY PDP MODULE P-Y-MAIN SCAN BUFFER | |
| ASSY PDP MODULE P-ADDRESS E BUFFER | |
| ASSY PDP MODULE P-ADDRESS F BUFFER | |
| ASSY BOARD P-SIDE A/V | |

* PDP 50" Check items listed after changing each

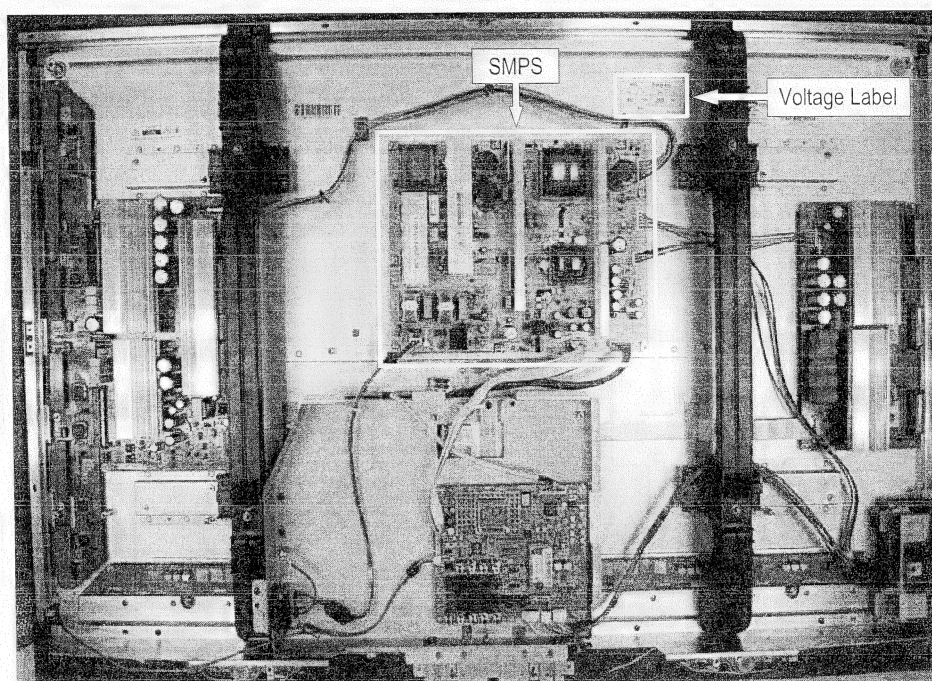
| Replaced assembly items | Check Items |
|--------------------------------------|--|
| ASSY PCB MISC-MAIN | 1) Auto Program 2) White Balance Adjust |
| SMPS-PDP TV | Vs, Va voltage check and adjust |
| ASSY PDP MODULE P-LOGIC MAIN | Not to be adjusted |
| ASSY PDP MODULE P-X-MAIN | |
| ASSY PDP MODULE P-Y-MAIN | |
| ASSY PDP MODULE P-Y-MAIN SCAN BUFFER | |
| ASSY PDP MODULE P-Y-MAIN SCAN BUFFER | |
| ASSY PDP MODULE P-ADDRESS E BUFFER | |
| ASSY PDP MODULE P-ADDRESS F BUFFER | |
| ASSY BOARD P-SIDE A/V | |

※ When replacing the SMPS or PDP panel, you have to check the voltage printed on the panel sticker and adjust it.

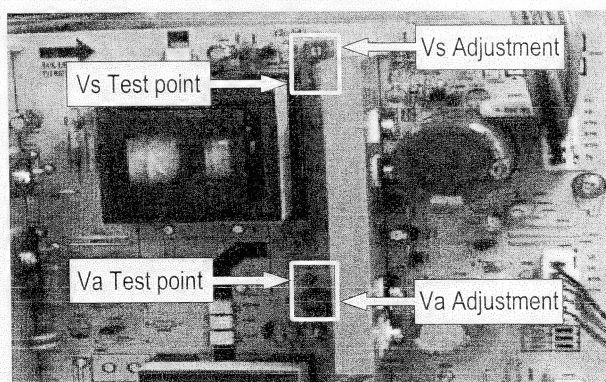
■ Voltage Adjustment

1. After replacing the SMPS or PDP panel, you must adjust the voltage referring to the voltage label printed on the panel.
(If you do not adjust the voltage, an abnormal discharge symptom may appear.)

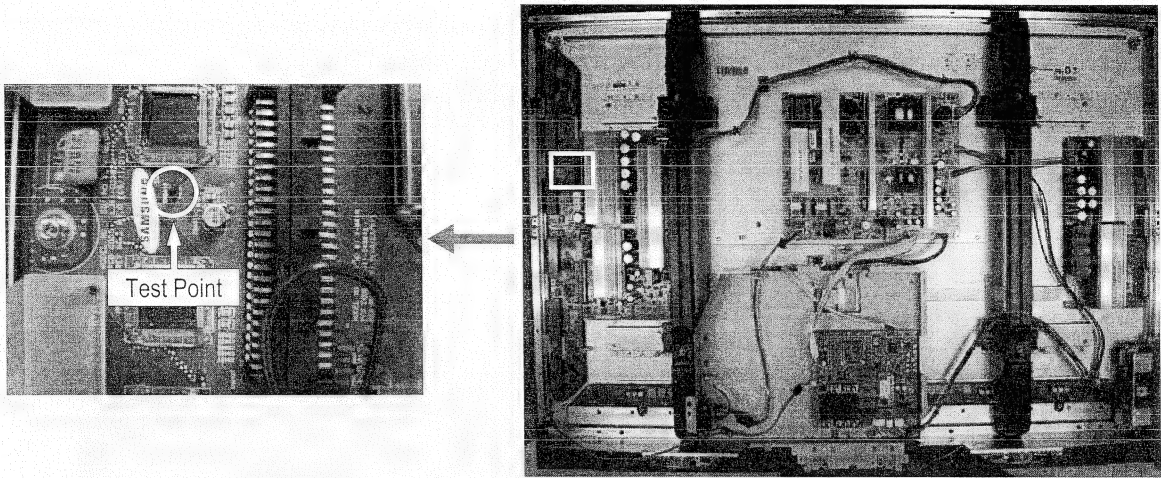
| | Value | Board Adjustment |
|-------|-------|------------------|
| Vs | 210 | SMPS |
| Va | 63 | |
| Vset | - | |
| Ve | 94 | |
| Vscan | -190 | |



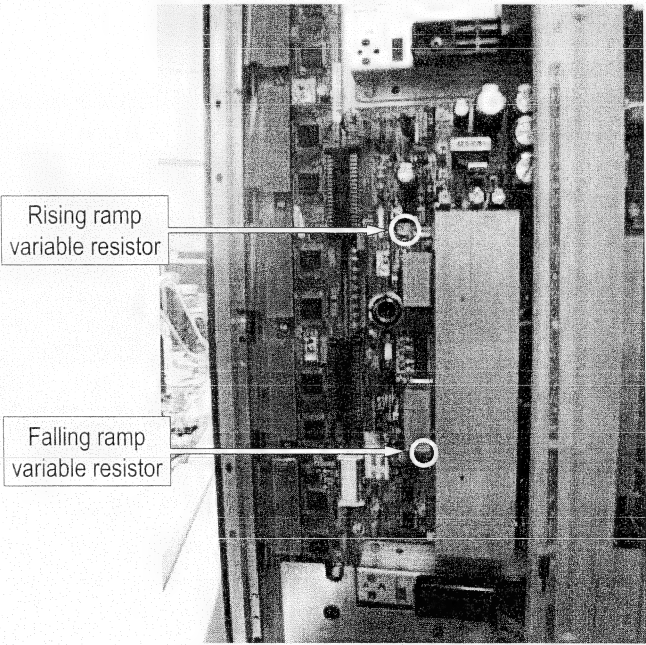
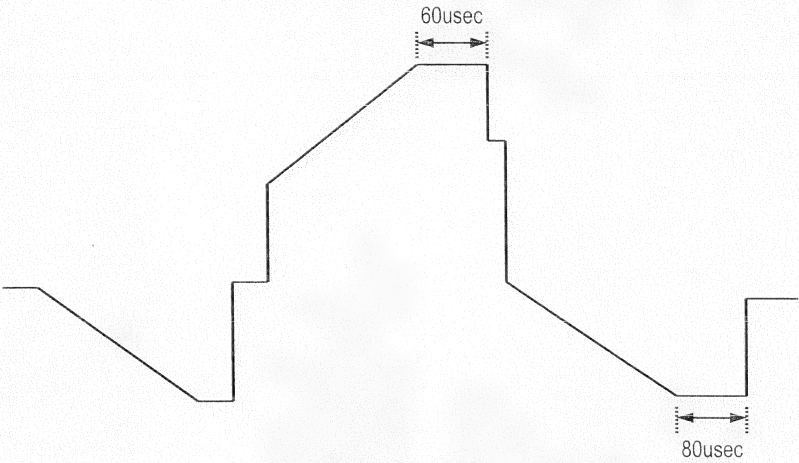
2. A point of adjusting SMPS-MAIN voltage.



■ Y-RR and Y-FR controls



Set the main reset (rising : 60usec, falling : 80usec) by change the value of variable resistor.

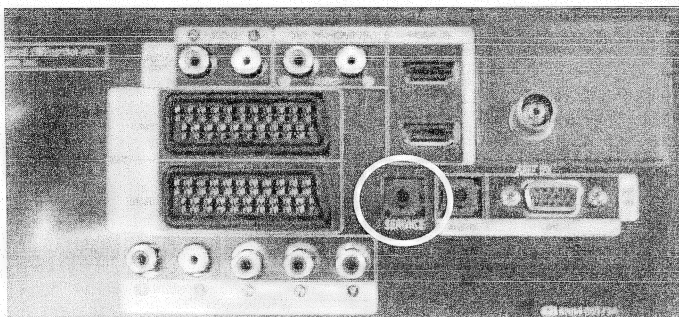


4-3 Upgrade

4-3-1 How to Update Flash ROM (with RS-232C Cable)

1. Install the MTKtool

Connect Set (Service Jack) and Jig Cable to execute Program Update.

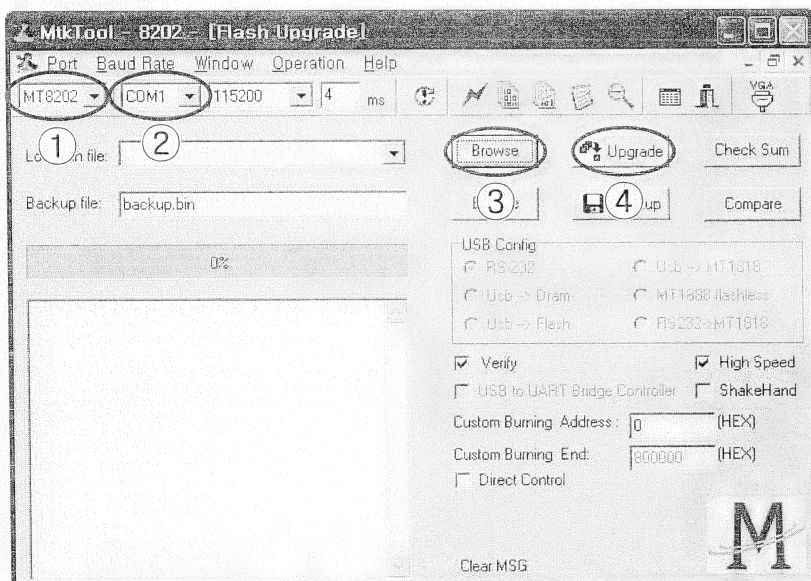


Check In factory menu

2. Option Byte → "Logic D/L" should be "OFF"
"Uart Select" should be "Debug D/L"

2. Turn on the Set (or on Stand by mode)

- Run "MTKtool"



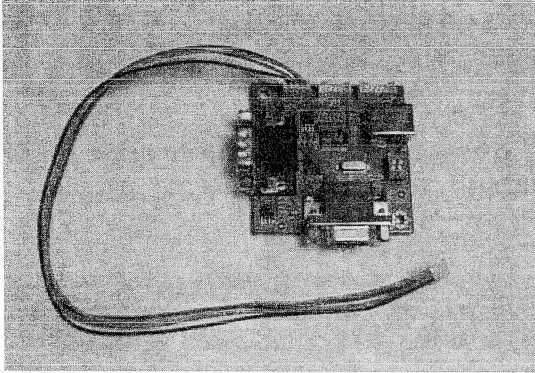
- Click Reset 
- Choose MT8202 ①
- Select Com Port ② (Auto Detect)
- Select Bin file, by browse ③
- Click Upgrade button ④

3. Turn off (= AC Power off) the Set (waiting a few seconds) and turn on again.

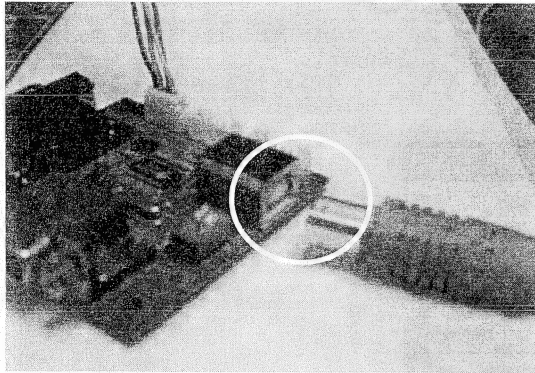
4-3-2 How to Update Flash ROM (with UART JIG)


※ In the usual cases, Update S/W by using RS-232C Cable.

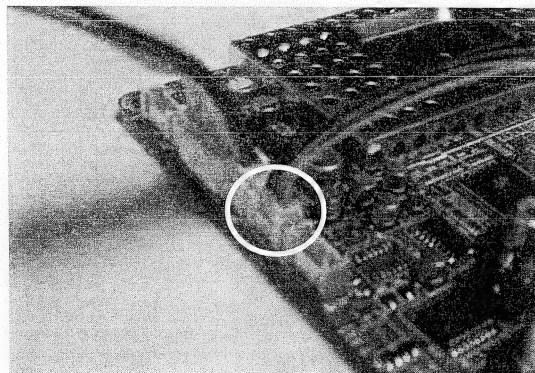
1. If some problems occur under this condition, update S/W by using UART JIG.



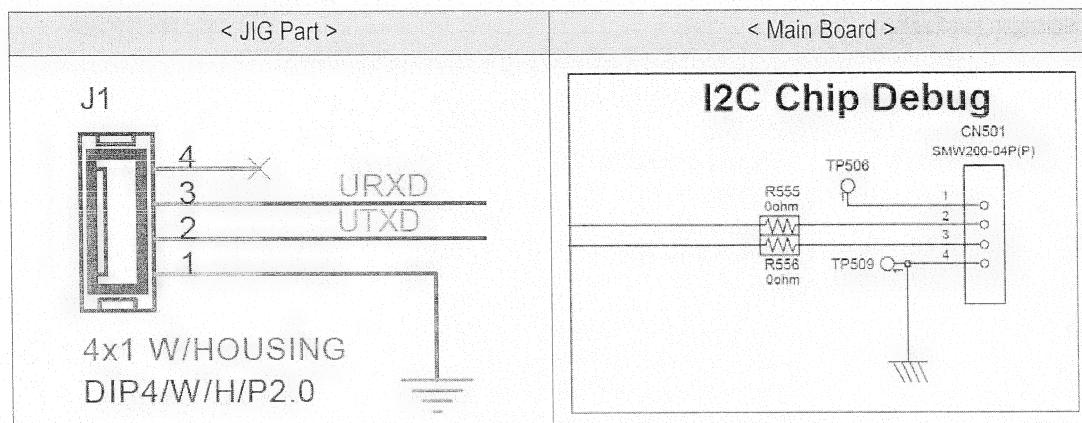
2. You can use UART JIG with USB Connection.



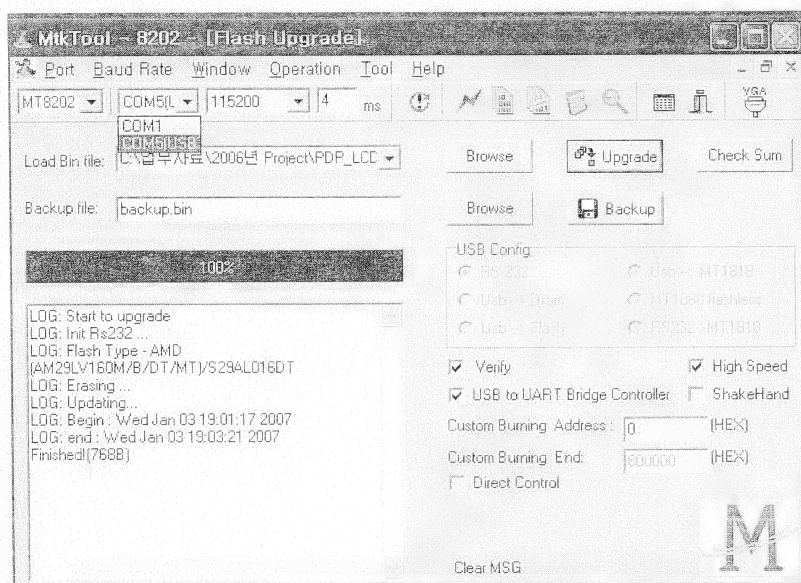
3. Install  PL-2303 Driver Installer in your PC before using the JIG.
Connect 4P Lead connector to Main Board (CN501)



4-3-3 Pin Assignment



1. Turn on the Set (or on Stand by mode)
- Run "MTKtool"

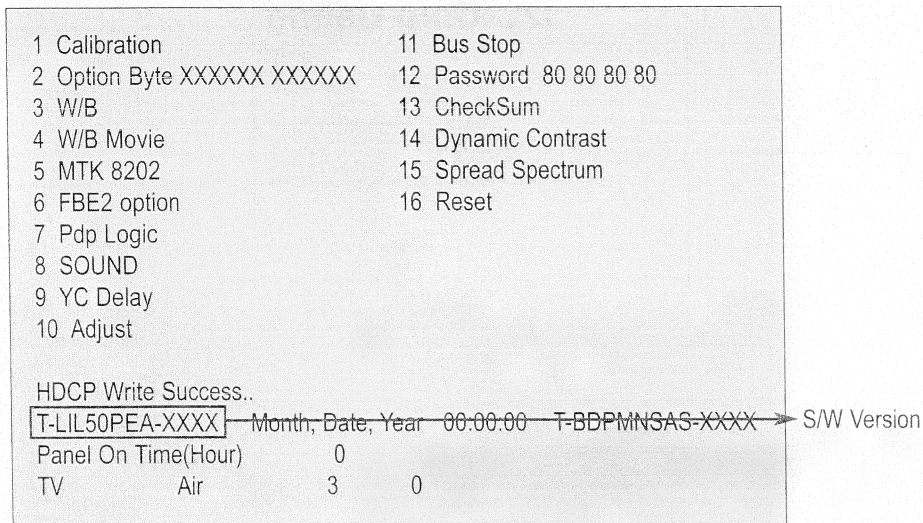


2. When you run "MTKtool", this Program can detect USB port automatically.
Choose USB interface and Update S/W as RS-232C case.

4-3-4 How to Check the Version of the Program

1. Procedures for checking in the Factory Menu.

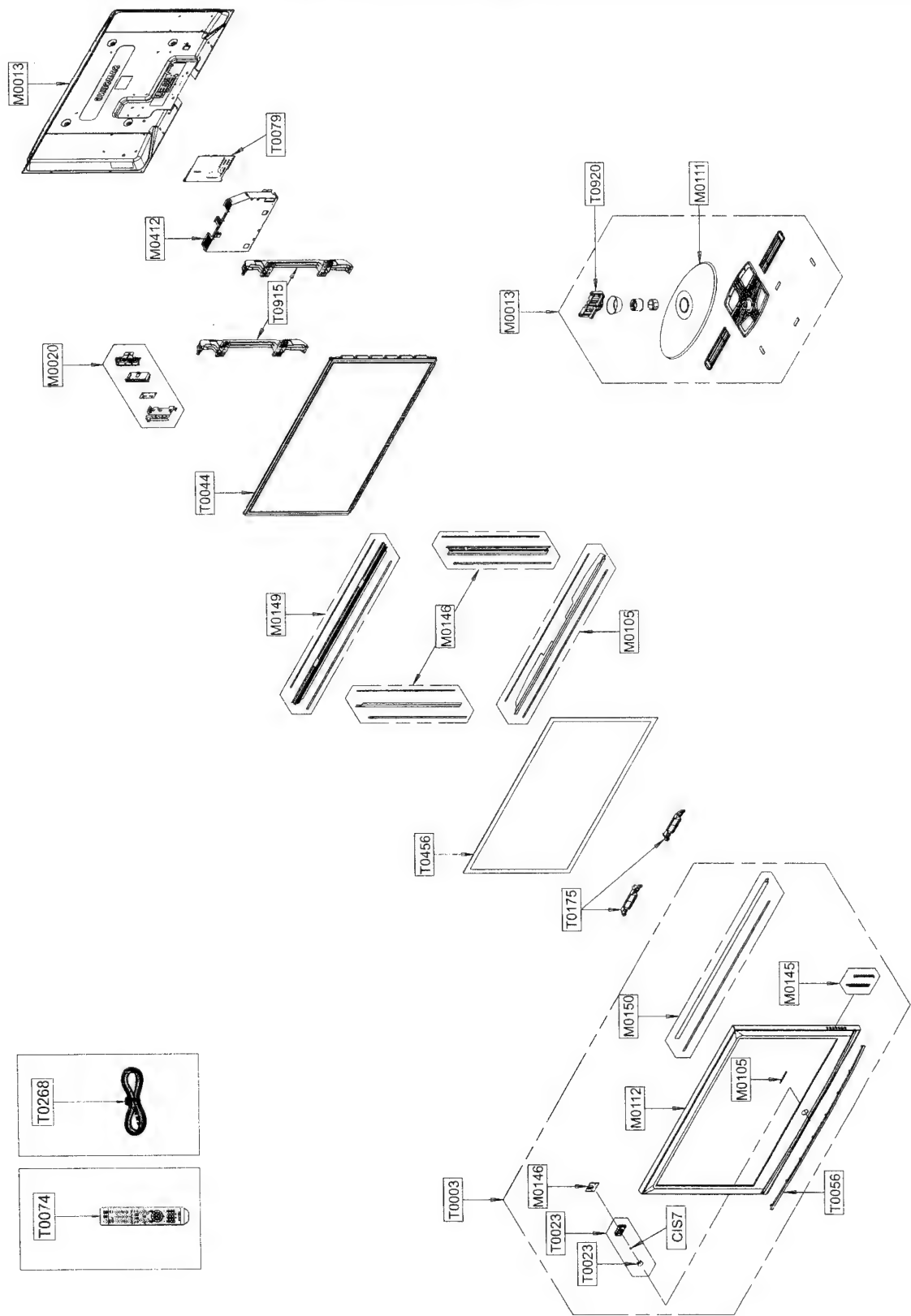
When entering Factory Mode, the version of the software is displayed at the bottom of the menu as described on page 4-17.



MEMO

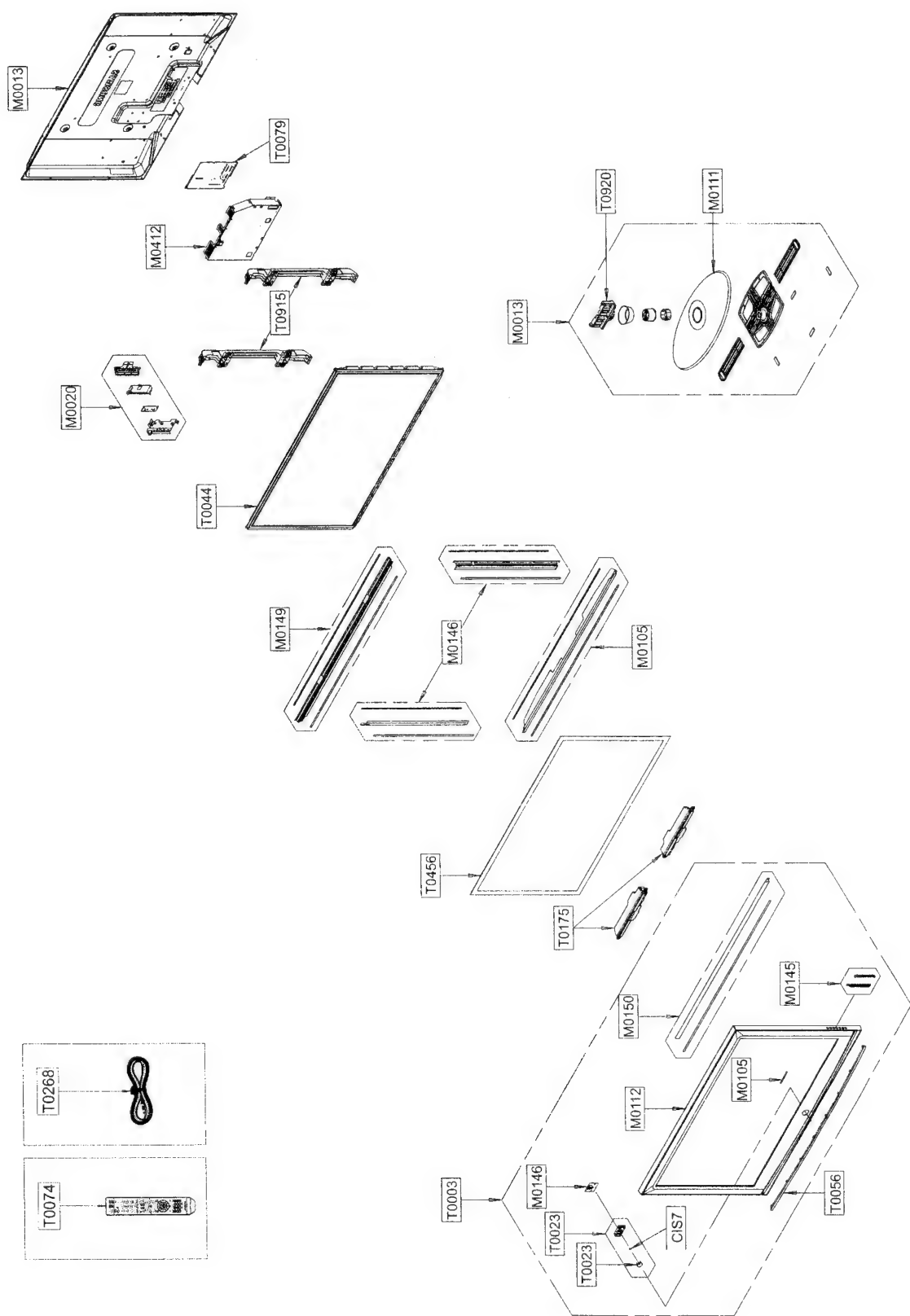
5. Exploded View & Part List

5-1 PS42C91HX/XEC Exploded View



| Loc. No. | Code No. | Description | Specification | Q'ty | SA/SNA | Remark |
|----------|-------------|-------------------------------|----------------------------------|------|--------|--------|
| CIS7 | AA61-60003B | SPRING ETC-CS | -,SUS304,-,OD11.2,N7,OD1 | 1 | S.N.A | |
| M0013 | BN96-04714B | ASSY STAND P-BASE | C9/Q9,ABS HB SF-0507,B | 1 | S.A | |
| M0013 | BN96-04709A | ASSY COVER P-REAR | 42Q9/C9,EU(Ready),PCM | 1 | S.A | |
| M0020 | BN96-04900D | ASSY BOARD P-SIDE A/V | LILY 42",SJ06-01-0 | 1 | S.N.A | |
| M0105 | BN67-00190A | LENS-LED | 42Q9,PC,light blue,Material of | 1 | S.N.A | |
| M0111 | BN63-03049B | COVER-STAND | 42Q9,ABS SF-0507,BK23 | 1 | S.N.A | |
| M0112 | BN63-03047C | COVER-FRONT | 42C9,ABS,HB,BK23,STEAM MOLD | 1 | S.N.A | |
| M0145 | BN96-04853B | ASSY BOARD P-FUNCTION | Lily/Calla,CT5000- | 1 | S.A | |
| M0146 | BN96-04687A | ASSY BRACKET P-FILTER SIDE | 42Q9,AL6063,T | 2 | S.N.A | |
| M0146 | BN96-04861D | ASSY BOARD P-POWER & IR | Lily/Calla,CT500 | 1 | S.A | |
| M0149 | BN96-04685A | ASSY BRACKET P-FILTER TOP | 42Q9,AL6063,T1 | 1 | S.N.A | |
| M0150 | BN96-04686A | ASSY BRACKET P-FILTER BOTTOM | 42Q9,AL6063 | 1 | S.N.A | |
| M0150 | BN96-04691B | ASSY BRACKET P-SUPPORT FILTER | 42Q9,AI 60 | 1 | S.N.A | |
| M0412 | BN96-04903C | ASSY BRACKET P-PCB | 42Q9,SECC T0.8 | 1 | S.N.A | |
| T0003 | BN96-04712C | ASSY COVER P-FRONT | 42C9,ABS HB,BK23,STEAM | 1 | S.A | |
| T0023 | BN96-04707A | ASSY COVER P-KNOB POWER | C9/Q9,ABS HB | 1 | S.N.A | |
| T0023 | BN64-00567A | KNOB POWER | 42Q9,PC,VIOLET | 1 | S.N.A | |
| T0044 | BN96-04592A | ASSY PDP MODULE P-MODULE | 42HD W2,PL42AX0 | 1 | S.A | ⚠ |
| T0056 | BN63-03091A | COVER-DECORATION | 42C9,ABS,HB,BLK | 1 | S.N.A | |
| T0074 | BN59-00609A | REMOCON | JASMINE / LILY,TM86,samsung 24p+ | 1 | S.A | |
| T0079 | BN94-01224B | ASSY PCB MISC-MAIN | PS-42C91H,EU,F33A,BN4 | 1 | S.A | ⚠ |
| T0175 | BN96-04704A | ASSY SPEAKER P | 8ohm,C9,10W,4P connector, | 1 | S.A | |
| T0268 | 3903-000145 | CBF-POWER CORD | DT,EU,FP3/YES,U(IEC C13-R | 1 | S.A | |
| T0456 | BN67-00188A | GLASS-FILTER EMI | 42" C7 HD,Sputter,with | 1 | S.A | ⚠ |
| T0915 | BN61-02894B | HOLDER-MODULE | 42Q9,PC ABS | 2 | S.N.A | |
| T0920 | BN61-02990A | GUIDE-STAND | 42Q9,PC GF20% | 1 | S.N.A | |

5-2 PS50C91HX/XEC Exploded View



| Loc. No. | Code No. | Description | Specification | Qty | SA/SNA | Remark |
|----------|-------------|-------------------------------|----------------------------------|-----|--------|--------|
| CIS7 | AA61-60003B | SPRING ETC-CS | -,SUS304,-,OD11.2,N7,OD1 | 1 | S.N.A | |
| M0013 | BN96-04714B | ASSY STAND P-BASE | C9/Q9,ABS HB SF-0507,B | 1 | S.A | |
| M0013 | BN96-04711A | ASSY COVER P-REAR | 50Q9/C9,EU(Ready),PCM | 1 | S.A | |
| M0020 | BN96-04900E | ASSY BOARD P-SIDE A/V | LILY 50",SJ06-01-0 | 1 | S.N.A | |
| M0105 | BN67-00190A | LENS-LED | 42Q9,PC,light blue,Material of | 1 | S.N.A | |
| M0111 | BN63-03049B | COVER-STAND | 42Q9,ABS SF-0507,BK23 | 1 | S.N.A | |
| M0112 | BN63-03067C | COVER-FRONT | 50C9,ABS,HB,BK23,STEAM MOLD | 1 | S.N.A | |
| M0145 | BN96-04853B | ASSY BOARD P-FUNCTION | Lily/Calla,CT5000- | 1 | S.A | |
| M0146 | BN96-04690A | ASSY BRACKET P-FILTER SIDE | 50Q9,AL6063,T | 2 | S.N.A | |
| M0146 | BN96-04861D | ASSY BOARD P-POWER & IR | Lily/Calla,CT500 | 1 | S.A | |
| M0149 | BN96-04688A | ASSY BRACKET P-FILTER TOP | 50Q9,AL6063,T1 | 1 | S.N.A | |
| M0150 | BN96-04692A | ASSY BRACKET P-SUPPORT FILTER | 50Q9,AL606 | 1 | S.N.A | |
| M0150 | BN96-04689A | ASSY BRACKET P-FILTER BOTTOM | 50Q9,AL6063 | 1 | S.N.A | |
| M0412 | BN96-04903C | ASSY BRACKET P-PCB | 42Q9,SECC T0.8 | 1 | S.N.A | |
| T0003 | BN96-04713C | ASSY COVER P-FRONT | 50C9,ABS HB,BK23,STEAM | 1 | S.A | |
| T0023 | BN96-04707A | ASSY COVER P-KNOB POWER | C9/Q9,ABS HB | 1 | S.N.A | |
| T0023 | BN64-00567A | KNOB POWER | 42Q9,PC,VIOLET | 1 | S.N.A | |
| T0044 | BN96-04775A | ASSY PDP MODULE P | 50HD W2A,M1.W2A,1365*7 | 1 | S.A | ⚠ |
| T0056 | BN63-03081A | COVER-DECORATION | 50C9,ABS,HB BLK | 1 | S.N.A | |
| T0074 | BN59-00609A | REMOCON | JASMINE / LILY,TM86,samsung 24p+ | 1 | S.A | |
| T0079 | BN94-01225B | ASSY PCB MISC-MAIN | PS-50C91H,EU,F33A,BN4 | 1 | S.A | ⚠ |
| T0175 | BN96-04704A | ASSY SPEAKER P | 8ohm,C9,10W,4P connector, | 1 | S.A | |
| T0268 | 3903-000145 | CBF-POWER CORD | DT,EU,FP3/YES,U(IEC C13-R | 1 | S.A | |
| T0456 | BN67-00197A | GLASS-FILTER EMI | 50 W2, C9,Sputter, wit | 1 | S.A | ⚠ |
| T0915 | BN61-02895B | HOLDER-MODULE | 50Q9,PCABS | 2 | S.N.A | |
| T0920 | BN61-02990A | GUIDE-STAND | 42Q9,PC GF20% | 1 | S.N.A | |

5-3 PS42C91HX/XEC Service Item

※ This is the list which is available to repair the real material at the time of service.

| Loc. No. | Code No. | Description | Specification | Q'ty | Remark |
|----------|-------------|--------------------------------|-----------------------------------|------|--------|
| M0013 | BN96-04709A | ASSY COVER P-REAR | 42Q9/C9,EU(Ready),PCM | 1 | |
| M0013 | BN96-04714B | ASSY STAND P-BASE | C9/Q9,ABS HB SF-0507,B | 1 | |
| M2893 | BN39-00859A | LEAD CONNECTOR | CALLA 50",UL20276#30,UL/C | 1 | |
| M2893 | BN39-00881A | LEAD CONNECTOR | LILLY 42"/50",UL1007#26,U | 1 | |
| T0003 | BN96-04712C | ASSY COVER P-FRONT | 42C9,ABS HB,BK23,STE A | 1 | |
| T0044 | BN96-04592A | ASSY PDP MODULE P-MODULE | 42HD W2,PL42AX0 | 1 | ⚠ |
| T0074 | BN59-00609A | REMOCON | JASMINE / LILY, TM86,samsung 24p+ | 1 | |
| T0079 | BN94-01224B | ASSY PCB MISC-MAIN | PS-42C91H,EU,F33A,BN4 | 1 | ⚠ |
| T0175 | BN96-04704A | ASSY SPEAKER P | 8ohm,C9,10W,4P connector, | 1 | |
| T0764 | BN44-00161A | SMPS-PDP TV | HPS4253,SEM,AC/DC,370W,AC100 | 1 | ⚠ |
| T1910 | BN96-04593A | ASSY PDP MODULE P-X-MAIN | 42HD W2,PL42AX0 | 1 | ⚠ |
| T1911 | BN96-04594A | ASSY PDP MODULE P-Y-MAIN | 42HD W2,PL42AX0 | 1 | ⚠ |
| T1914 | BN96-04597A | ASSY PDP MODULE P-ADDRESS-E BU | 42HD W2,P | 1 | |
| T1915 | BN96-04598A | ASSY PDP MODULE P-ADDRESS-F BU | 42HD W2,P | 1 | |
| T1917 | BN96-04596A | ASSY PDP MODULE P-LOGIC MAIN | 42HD W2,PL4 | 1 | |
| T9698 | BN96-04595A | ASSY PDP MODULE P-Y-MAIN SCAN | 42HD W2,PL | 1 | |

5-4 PS50C91HX/XEC Service Item

※ This is the list which is available to repair the real material at the time of service.

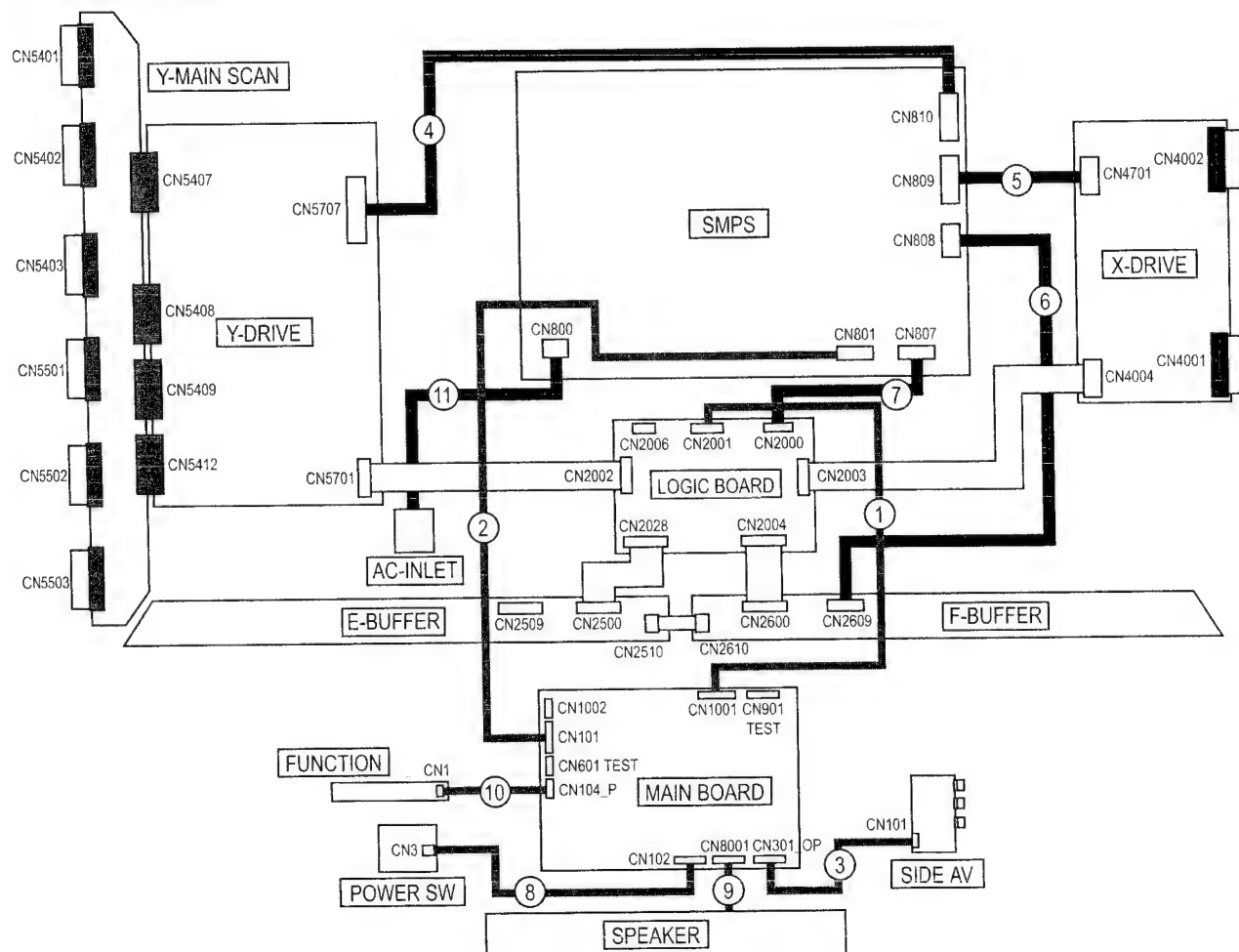
| Loc. No. | Code No. | Description | Specification | Q'ty | Remark |
|----------|-------------|--------------------------------|-----------------------------------|------|--------|
| M0013 | BN96-04711A | ASSY COVER P-REAR | 50Q9/C9,EU(Ready),PCM | 1 | |
| M0013 | BN96-04714B | ASSY STAND P-BASE | C9/Q9,ABS HB SF-0507,B | 1 | |
| M2893 | BN39-00817A | LEAD CONNECTOR | LILLY 50",UL20276#30,UL/C | 1 | |
| M2893 | BN39-00881A | LEAD CONNECTOR | LILLY 42"/50",UL1007#26,U | 1 | |
| T0003 | BN96-04713C | ASSY COVER P-FRONT | 50C9,ABS HB,BK23,STE A | 1 | |
| T0044 | BN96-04775A | ASSY PDP MODULE P | 50HD W2A,M1,W2A,1365*7 | 1 | ⚠ |
| T0074 | BN59-00609A | REMOCON | JASMINE / LILY, TM86,samsung 24p+ | 1 | |
| T0079 | BN94-01225B | ASSY PCB MISC-MAIN | PS-50C91H,EU,F33A,BN4 | 1 | ⚠ |
| T0175 | BN96-04704A | ASSY SPEAKER P | 8ohm,C9,10W,4P connector, | 1 | |
| T0764 | BN44-00162A | SMPS-PDP TV | HPS5053,SEM,AC/DC,460W,AC100 | 1 | ⚠ |
| T1910 | BN96-04573A | ASSY PDP MODULE P-X-MAIN | 50HD W2,PL50HW0 | 1 | ⚠ |
| T1911 | BN96-04574A | ASSY PDP MODULE P-Y-MAIN | 50HD W2,PL50HW0 | 1 | ⚠ |
| T1914 | BN96-04578A | ASSY PDP MODULE P-ADDRESS E_BU | 50HD W2,P | 1 | |
| T1915 | BN96-04579A | ASSY PDP MODULE P-ADDRESS F_BU | 50HD W2,P | 1 | |
| T1917 | BN96-04881A | ASSY PDP MODULE P-LOGIC MAIN | PL50HW021A, | 1 | |
| T1960 | BN96-04575A | ASSY PDP MODULE P-Y-MAIN UPPER | 50HD W2,P | 1 | |
| T1961 | BN96-04576A | ASSY PDP MODULE P-Y-MAIN LOWWE | 50HD W2,P | 1 | |

MEMO

6. Wiring Diagram

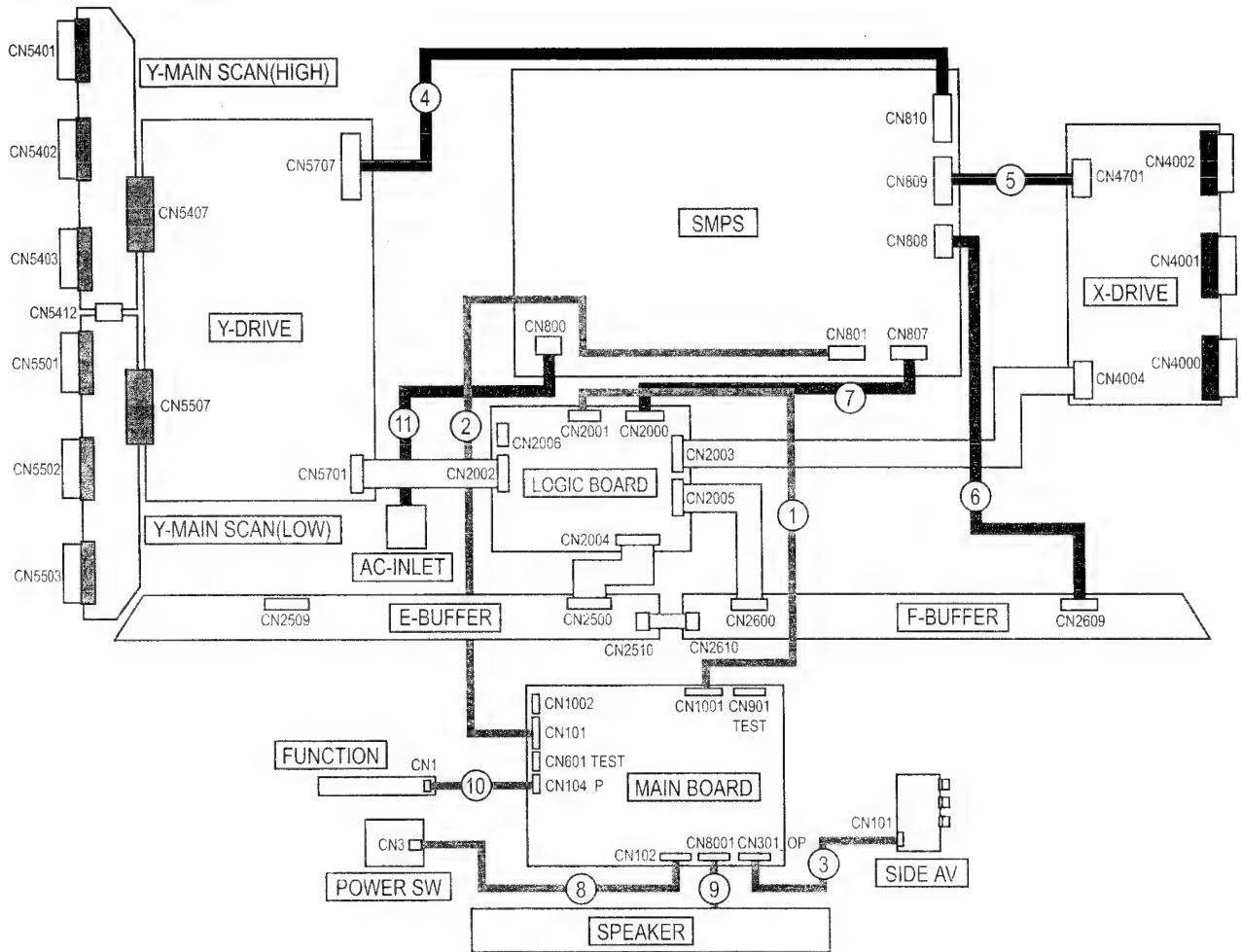
6-1 Overall Wiring

<42" Overall Wiring>


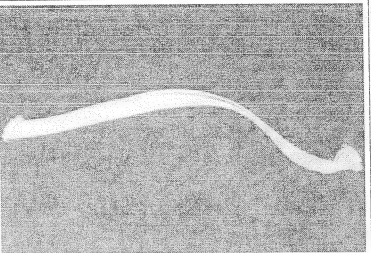
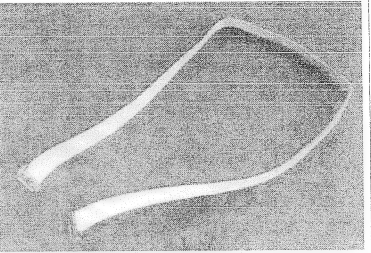
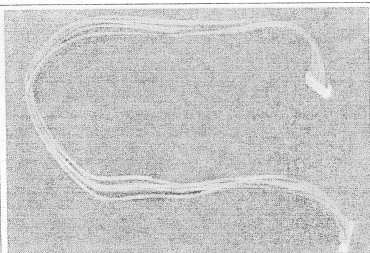

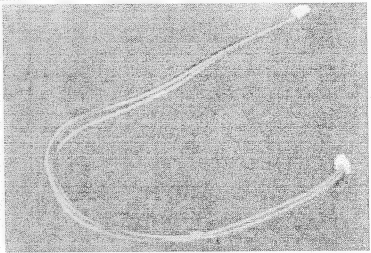
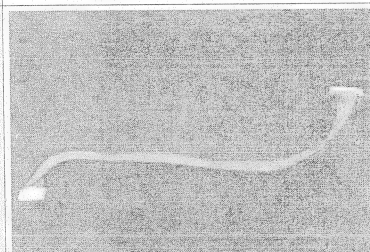
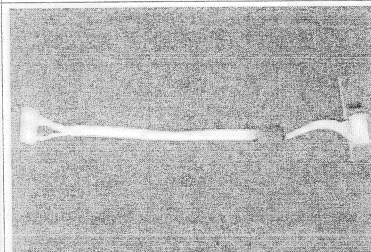
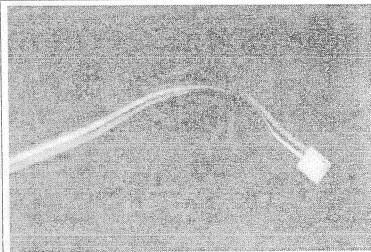
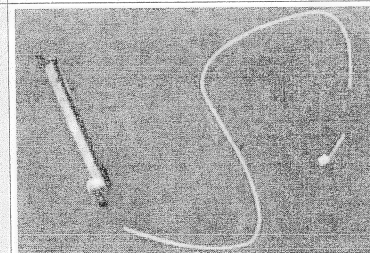
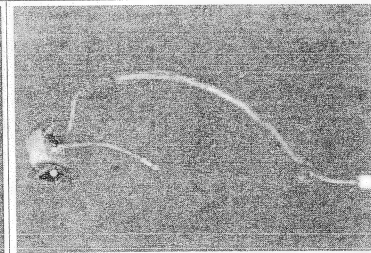


Wiring Diagram

<50" Overall Wiring>



※ The code number of cable(Lead-connector) can be changed, see "5. Exploded View & Part List."

| | | | |
|-------|---|--|---|
| Use | ① LVDS 31P-30P | ② POWER 24P | ③ SIDE |
| Code | 42" - BN39-00859A 50" - BN39-00817A | BN39-00881A | - |
| Photo |  |  |  |
| Use | ④ Y Drive | ⑤ X Drive | ⑥ Address |
| Code | - | - | - |
| Photo |  |  |  |
| Use | ⑦ Logic | ⑧ Front | ⑨ SPEAKER |
| Code | - | - | - |
| Photo |  |  |  |
| Use | ⑩ FUNCTION | ⑪ AC_INPUT | |
| Code | - | 42" - 2901-001378 50" - 2901-001340 | |
| Photo |  |  | |

Wiring Diagram

| ① CN1401(MAIN B'D) ↔ CN2010(LOGIC B'D) | | | | ② CN101(MAIN B'D) ↔ CN801(SMPS) | | | |
|---|----------|---------|----------|------------------------------------|--------------|---------|--------------|
| Pin No. | Signal | Pin No. | Signal | Pin No. | Signal | Pin No. | Signal |
| 1 | RxIN0- | 16 | NC | 1 | PS_ON | 13 | 5V |
| 2 | RxIN0+ | 17 | GND | 2 | N/C (Auto_V) | 14 | 5V |
| 3 | RxIN1- | 18 | WP | 3 | STBY | 15 | 5V |
| 4 | RxIN1+ | 19 | SCL | 4 | GND_STBY | 16 | 5V |
| 5 | RxIN2- | 20 | SDA | 5 | GND_18V AMP | 17 | GND_12V |
| 6 | RxIN2+ | 21 | LVDS Opt | 6 | GND_18V AMP | 18 | GND_12V |
| 7 | RxINCLK- | 22 | DCC Opt | 7 | 18V AMP | 19 | 12V |
| 8 | RxINCLK+ | 23 | GND | 8 | 18V AMP | 20 | GND_12V |
| 9 | RxIN3- | 24 | GND | 9 | GND_5V | 21 | 12V |
| 10 | RxIN3+ | 25 | GND | 10 | GND_5V | 22 | 12V |
| 11 | NC | 26 | Vdd | 11 | GND_5V | 23 | N.C(FAN_ON) |
| 12 | NC | 27 | Vdd | 12 | GND_5V | 24 | N.C(FAN_DET) |
| 13 | NC | 28 | Vdd | | | | |
| 14 | NC | 29 | Vdd | | | | |
| 15 | NC | 30 | Vdd | | | | |

| ③ CN1804(MAIN B'D) ↔ CN105(SIDE AV) | | | | | | | |
|--|--------|---------|-------------|---------|-------------|---------|-------------|
| Pin No. | Signal | Pin No. | Signal | Pin No. | Signal | Pin No. | Signal |
| 1 | GND | 12 | TXC- | 23 | NC | 34 | VIDEO_SR_IN |
| 2 | TX2+ | 13 | GND | 24 | NC | 35 | VIDEO_SL_IN |
| 3 | TX2- | 14 | MICOM_CEC | 25 | GND | 36 | HP_IDENT |
| 4 | GND | 15 | GND | 26 | SVHS_IDENT | 37 | HP_OUT_R |
| 5 | TX1+ | 16 | TSCL | 27 | SVHS_Y | 38 | HP_OUT_L |
| 6 | TX1- | 17 | TSDA | 28 | GND | 39 | USB_VCC |
| 7 | GND | 18 | LSCL | 29 | SVHS_C | 40 | B1.8V |
| 8 | TX0+ | 19 | HDMI3_5V | 30 | GND | 41 | B3.3V |
| 9 | TX0- | 20 | HPD_SIL9185 | 31 | VIDEO_IDENT | | |
| 10 | GND | 21 | DDC_WP | 32 | VIDEO_CVBS | | |
| 11 | TXC+ | 22 | GND | 33 | GND | | |

| | | | | | | | | | |
|--|--------|--|--------|---|--------|--|--------|--|------------|
| ④ CN805(SMPS) ↔ CN5015(Y B'D) | | ⑤ CN804(SMPS) ↔ CN4000(X B'D) | | ⑥ CN806/CN807(SMPS) ↔ CN2501(E-BUFFER) | | ⑦ CN803(SMPS) ↔ CN2036(LOGIC B'D) | | ⑧ CN1701(MAIN B'D) ↔ POWER&IR | |
| Pin No. | Signal | Pin No. | Signal | Pin No. | Signal | Pin No. | Signal | Pin No. | Signal |
| 1 | Vg | 1 | Vg | 1 | Va | 1 | STBY | 1 | IR |
| 2 | GND | 2 | GND | 2 | GND | 2 | VS_ON | 2 | GND |
| 3 | GND | 3 | GND | 3 | 5.3V | 3 | N/C | 3 | A5V_1 |
| 4 | GND | 4 | Vs | | | 4 | PS_ON | 4 | LED_STB |
| 5 | Vs | 5 | Vs | | | 5 | RTN | 5 | BUZZER |
| 6 | Vs | | | | | 6 | 5.3V | 6 | KEY_INPUT1 |
| | | | | | | 7 | RTN | 7 | KEY_INPUT2 |
| | | | | | | 8 | RTN | 8 | GND |
| | | | | | | 9 | 5.3V | 9 | B5V |
| | | | | | | 10 | 5.3V | 10 | LED_CTRL |

| | | | | | |
|---------------------------------------|--------|--|------------|-----------------------------------|------------|
| ⑨ CN1201(MAIN B'D) ↔ SPEAKER | | ⑩ CN1702(MAIN B'D) ↔ FUNCTION | | ⑪ CN800(SMPS) ↔ AC INLET | |
| Pin No. | Signal | Pin No. | Signal | Pin No. | Signal |
| 1 | R+_OUT | 1 | KEY_INPUT1 | 1 | AC Neutral |
| 2 | R-_OUT | 2 | KEY_INPUT2 | 2 | N/C |
| 3 | L+_OUT | 3 | GND | 3 | AC Live |
| 4 | L-_OUT | | | | |

6-1-1 Connector role

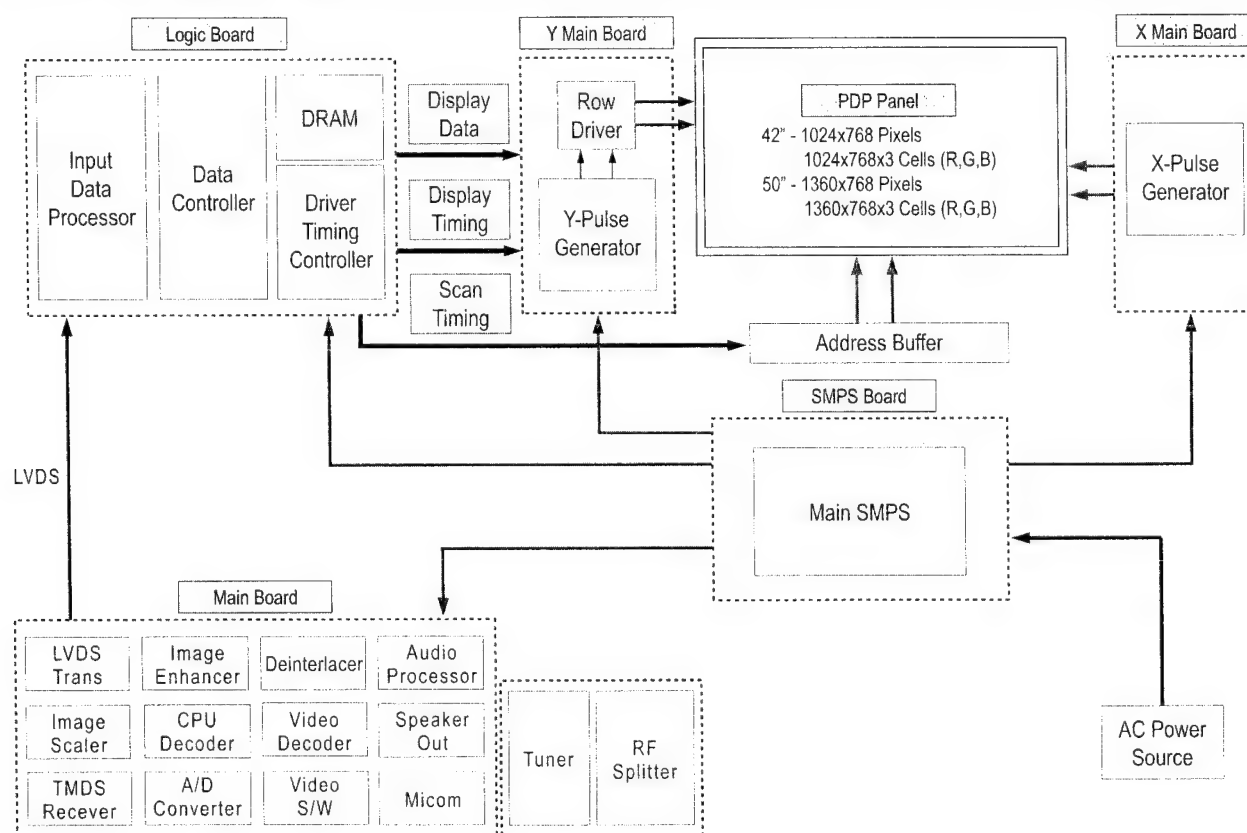
| 42" Loc. No. | 50" Loc. No. | Description |
|--------------|--------------|--|
| CN5401 | CN5401 | Module and Y-Main Scan Connect |
| CN5402 | CN5402 | Module and Y-Main Scan Connect |
| CN5403 | CN5403 | Module and Y-Main Scan Connect |
| - | CN5412 | Y-Main Scan(High) and Y-Main Scan(Low) Connect |
| CN5501 | CN5501 | Module and Y-Main Scan Connect |
| CN5502 | CN5502 | Module and Y-Main Scan Connect |
| CN5503 | CN5503 | Module and Y-Main Scan Connect |
| CN5407 | CN5407 | Y-Drive and Y-Main Scan Connect |
| CN5408 | CN5408 | Y-Drive and Y-Main Scan Connect |
| CN5409 | CN5409 | Y-Drive and Y-Main Scan Connect |
| CN5412 | CN5412 | Y-Drive and Y-Main Scan Connect |
| CN5707 | CN5707 | Y-Drive and SMPS Connect |
| CN5701 | CN5701 | Y-Drive and Logic Board Connect |
| CN810 | CN810 | Y-Drive and SMPS Connect |
| CN809 | CN809 | X-Drive and SMPS Connect |
| CN808 | CN808 | SMPS and F-Buffer Connect |
| CN807 | CN807 | SMPS and Logic Board Connect |
| CN801 | CN801 | SMPS and Main Board Connect |
| CN800 | CN800 | SMPS and AC-Inlet Connect |
| CN4701 | CN4701 | SMPS and X-Drive Connect |
| CN4004 | CN4004 | Logic Board and X-Drive Connect |
| CN4002 | CN4002 | Module and X-Drive Connect |
| CN4001 | CN4001 | Module and X-Drive Connect |
| - | CN4000 | Module and X-Drive Connect |
| CN2000 | CN2000 | SMPS and Logic Board Connect |
| CN2001 | CN2001 | Main Board and Logic Board Connect |
| CN2002 | CN2002 | Y-Drive and Logic Board Connect |
| CN2004 | CN2004 | Logic Board and F-Buffer Connect |
| CN2028 | CN2028 | Logic Board and E-Buffer Connect |
| CN2500 | CN2500 | Logic Board and E-Buffer Connect |
| CN2510 | CN2510 | E-Buffer and F-Buffer Connect |
| CN2610 | CN2610 | E-Buffer and F-Buffer Connect |
| CN2600 | CN2600 | Logic Board and F-Buffer Connect |
| CN2609 | CN2609 | SMPS and F-Buffer Connect |
| CN1101 | CN1101 | SMPS and Main Board Connect |
| CN2202 | CN2202 | Main Board and Logic Board Connect |
| CN1605 | CN1605 | Function Assy and Main Board Connect |
| CN1404 | CN1404 | Side AV Assy and Main Board Connect |

| 42" Loc. No. | 50" Loc. No. | Description |
|--------------|--------------|--------------------------------------|
| CN1606 | CN1606 | Power SW Assy and Main Board Connect |
| CN1203 | CN1203 | Speaker and Main Board Connect |
| CN101 | CN101 | Side AV Assy and Main Board Connect |
| CN1 | CN1 | Function Assy and Main Board Connect |
| CN3 | CN3 | Power SW Assy and Main Board Connect |

MEMO

7. Schematic Diagram

7-1 Circuit Description



■ SMPS Board

The SMPS used for the PDP has been designed to be efficient, compact and lightweight. For VS and VA outputs, a LLC converter has been used. For the other outputs, a Flyback converter has been used.

■ LOGIC Board

The logic circuit consists of a Logic Main Board and an Address Buffer Board. The Logic Main Board decodes the video signal encoded by the Video Board, outputs the ADDRESS data signal for each pattern and generates X and Y drive signals. The Address Buffer Board buffers and transfers the ADDRESS data output signal using TCP IC.

- LVDS with built-in video signal processing (W/L, error diffusion, APC, FCR, etc.) applied and 1 ASIC chip.
- Outputs the address Drive IC control and data signals to the Buffer Board.
- Outputs the control signal for the X and Y Drive Boards.
- Monitors major drive voltages (Micom Circuit Block); detects if a surge voltage has been applied and protects the Drive Circuit.
- Temperature Adaptive Operating Mode (Low Temperature/Room Temperature/High Temperature); Discharge optimization for each temperature level.

■ X-MAIN Board

Connects to the X terminal block, 1) provides maintaining voltage waveform (including ERC), and 2) maintains the Ve bias in the Scan section.

■ Y-MAIN Board

Connects to the Y terminal block, 1) provides maintaining voltage waveform (including ERC), 2) provides Y Rising, Falling Ramp waveforms, and 3) maintains the Vscan bias.

■ Address Buffer Board

It delivers the data signal and control signal to the TCP.

MEMO

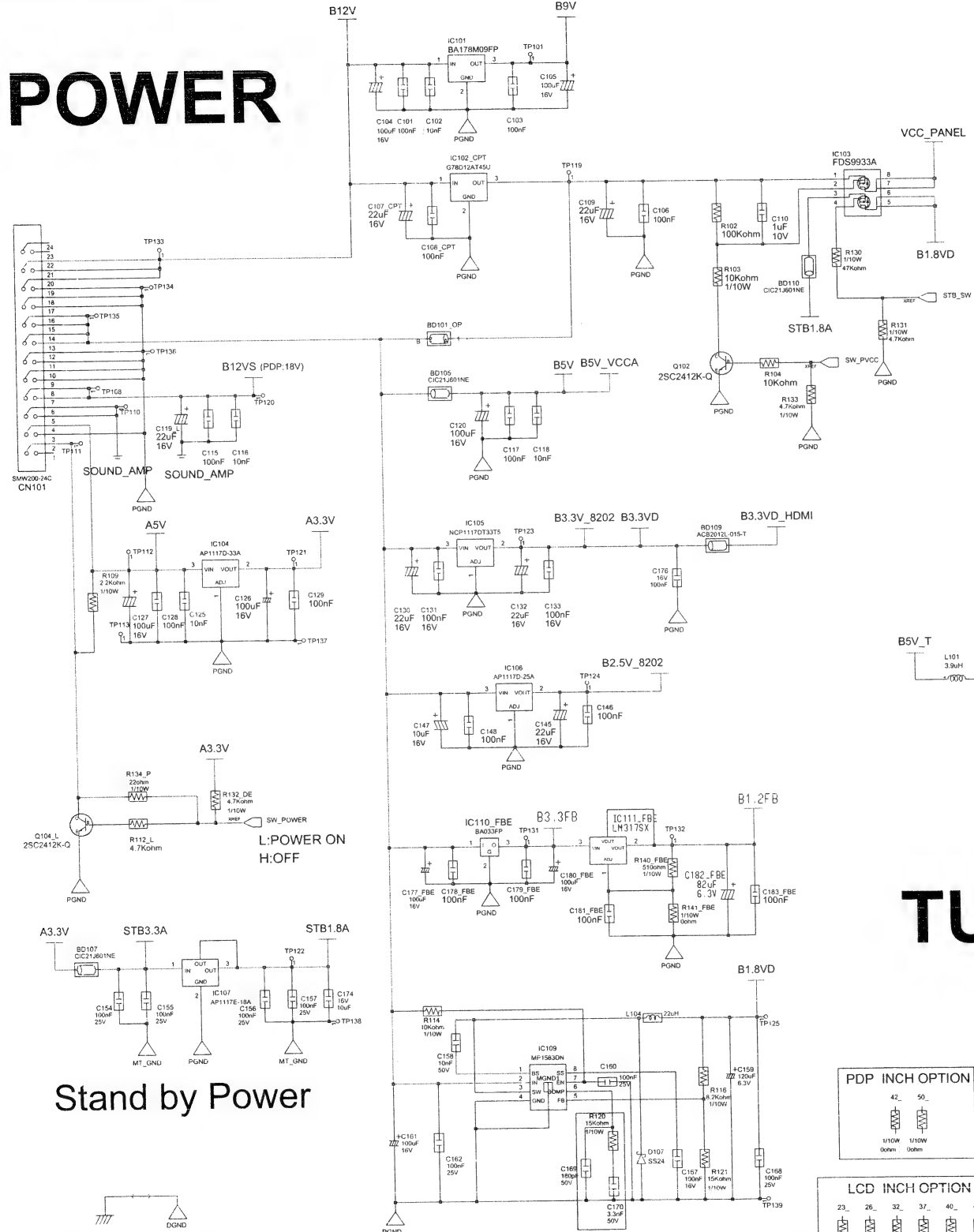
7-2 Schematic Diagram

7-2-1 POWER_ETC

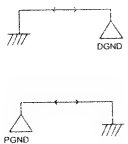
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| |
|-------|
| Power |
| Vidoe |
| Audio |

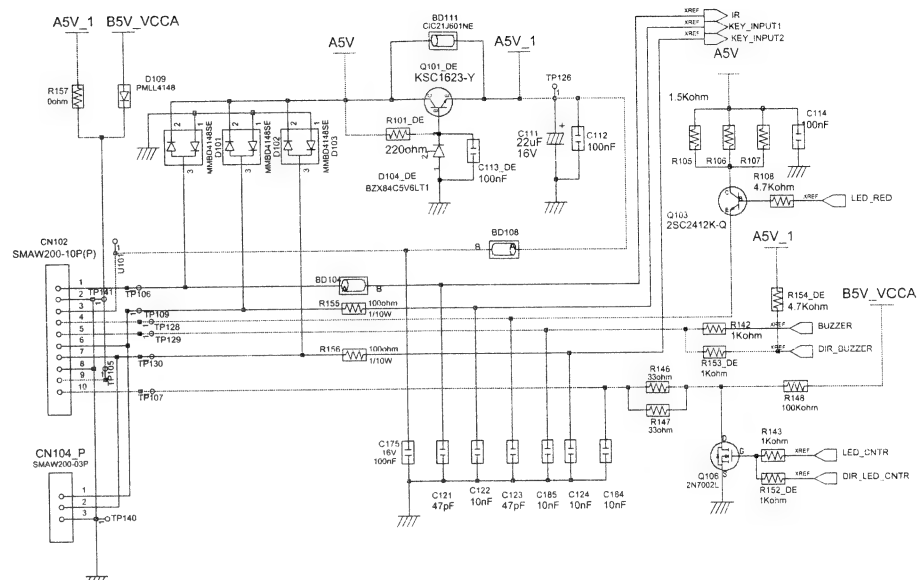
POWER



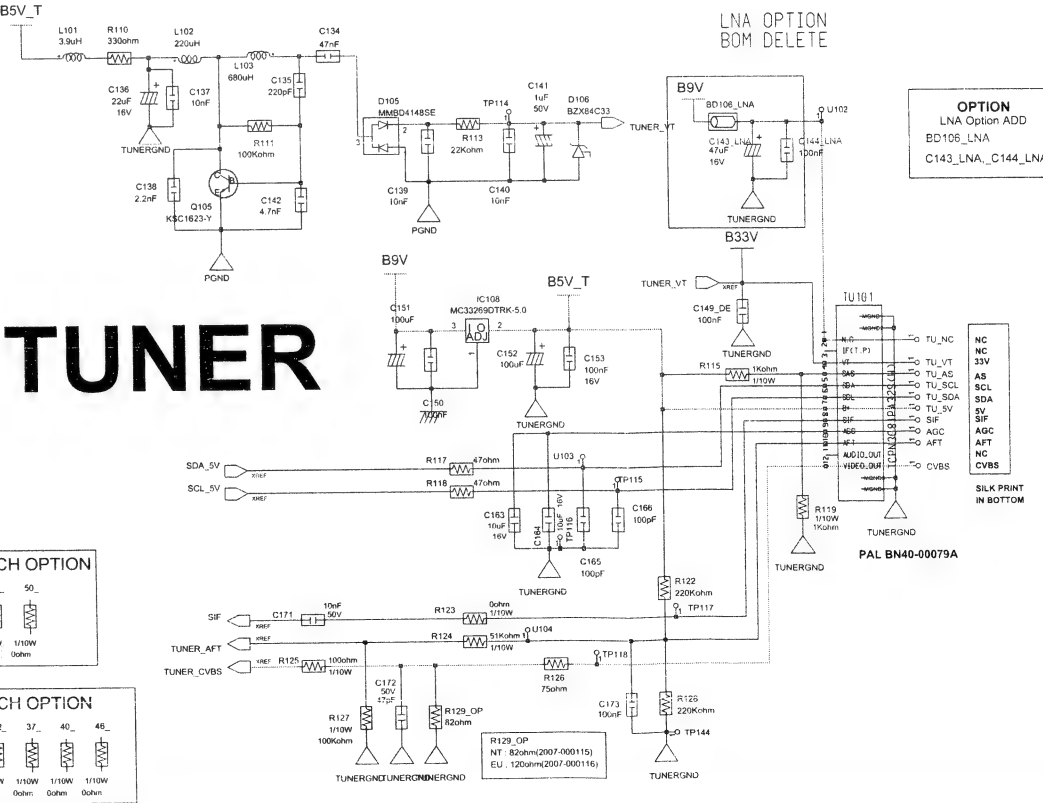
Stand by Power



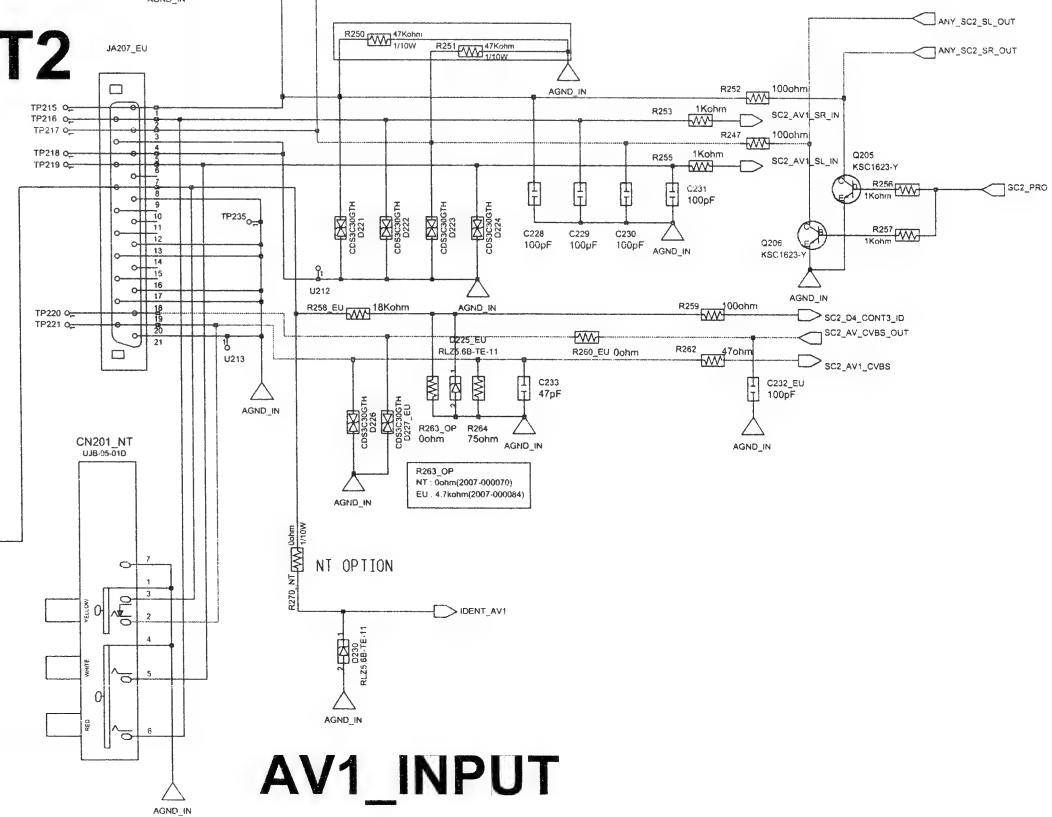
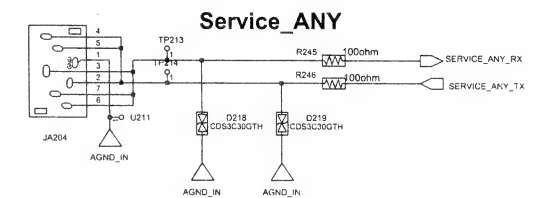
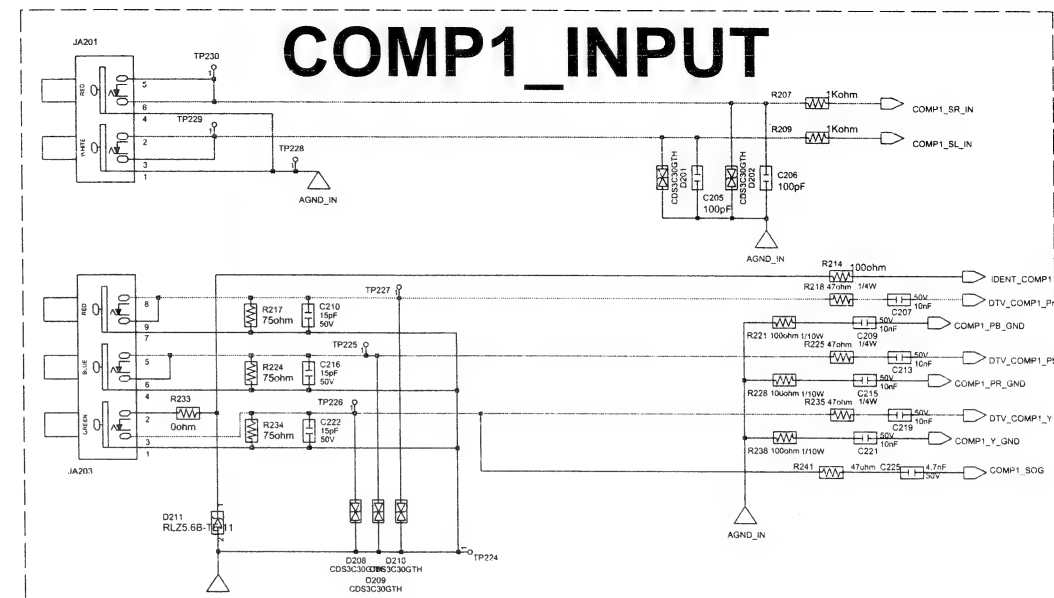
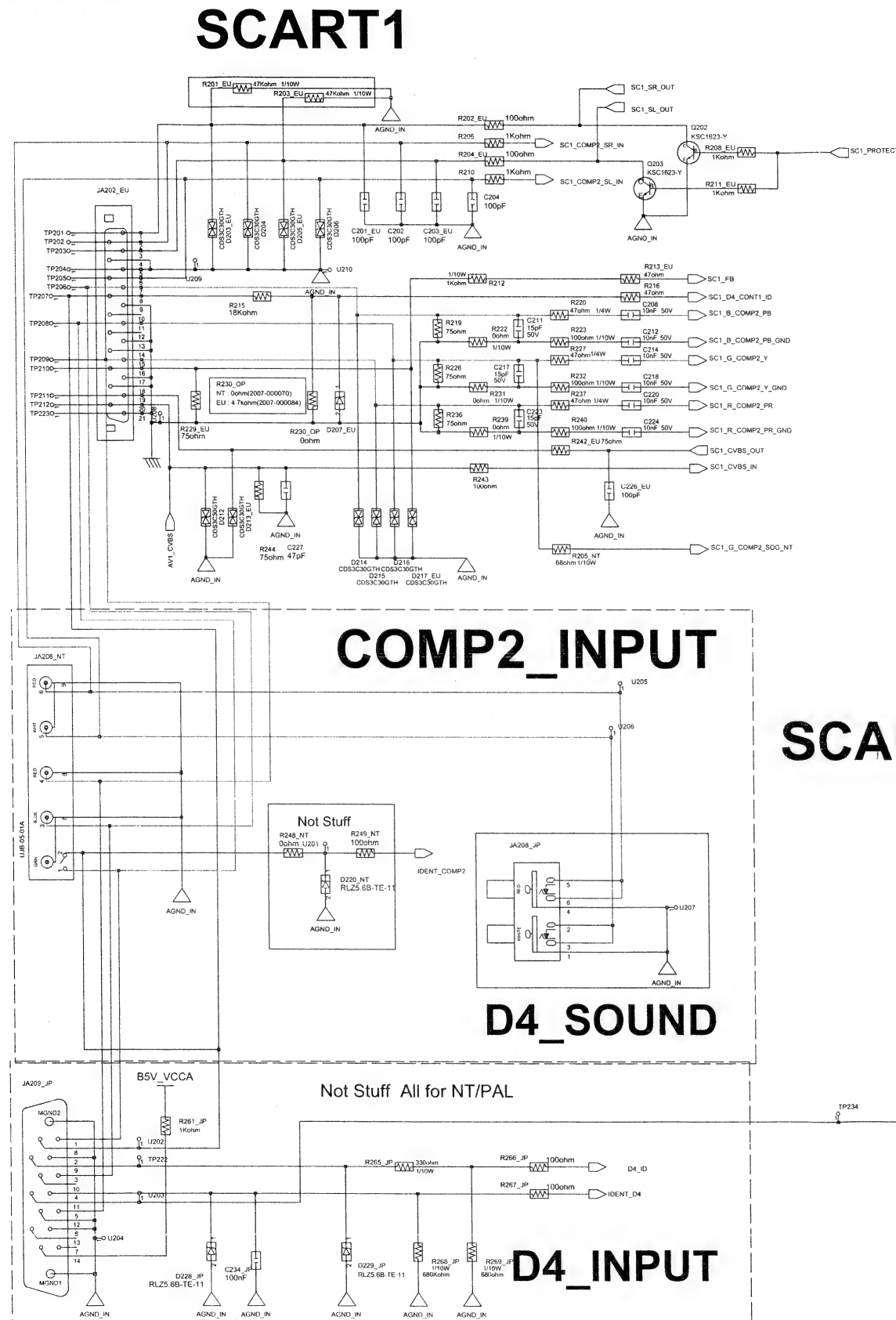
Function



TUNER

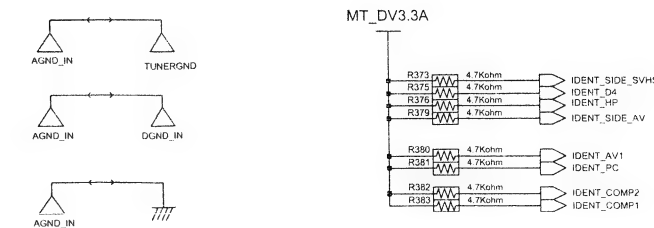


| | |
|-------|-------|
| _____ | Power |
| _____ | Vidoe |
| _____ | Audio |



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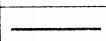
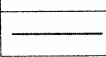
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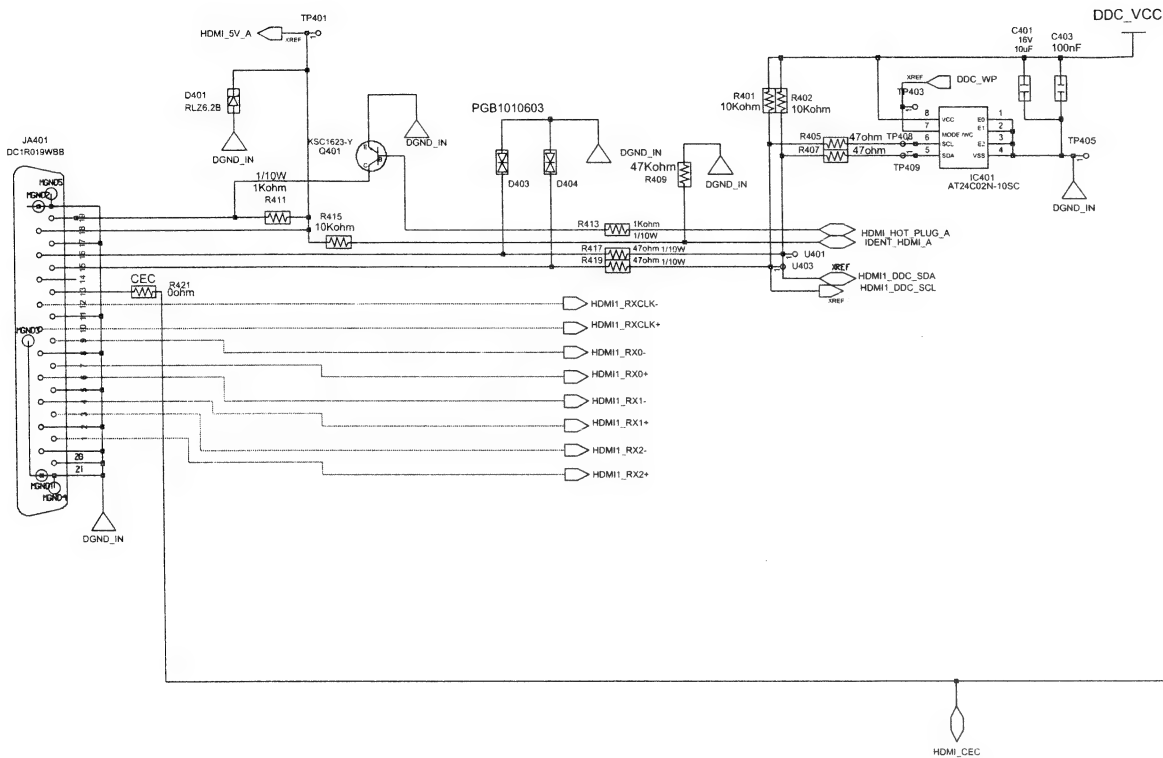
| | | | | |
|------------|----------|---------|---------|---------|
| | CN301_OP | CN302_L | CN303_L | CN304_L |
| LCD | | 0 | 0 | 0 |
| LCD46"&PDP | 0 | | | |

7-2-4 INPUT_JACK3

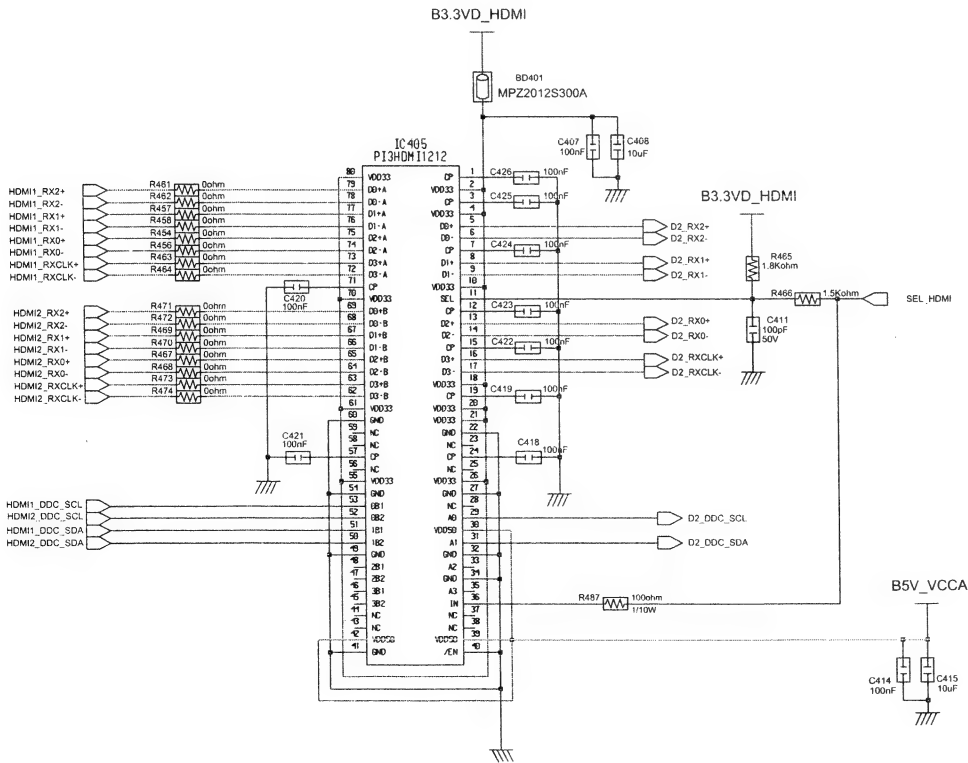
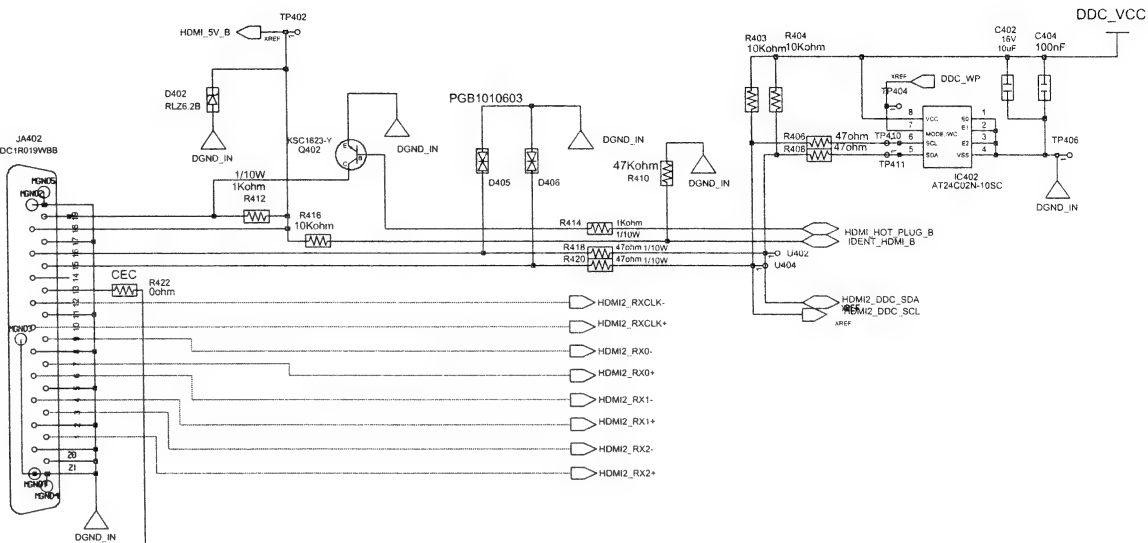
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| | |
|---|-------|
|  | Power |
|  | Vidoe |
|  | Audio |

HDMI1_INPUT

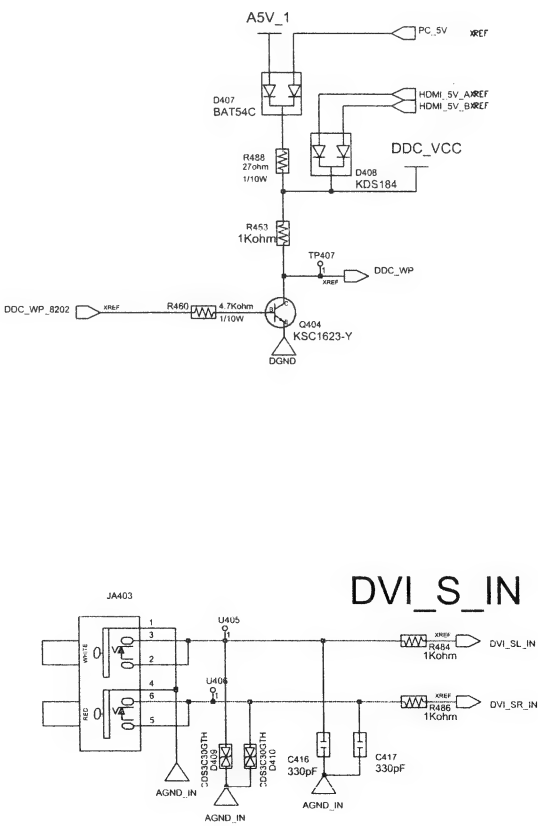


HDMI2_INPUT



HDMI SWITCH

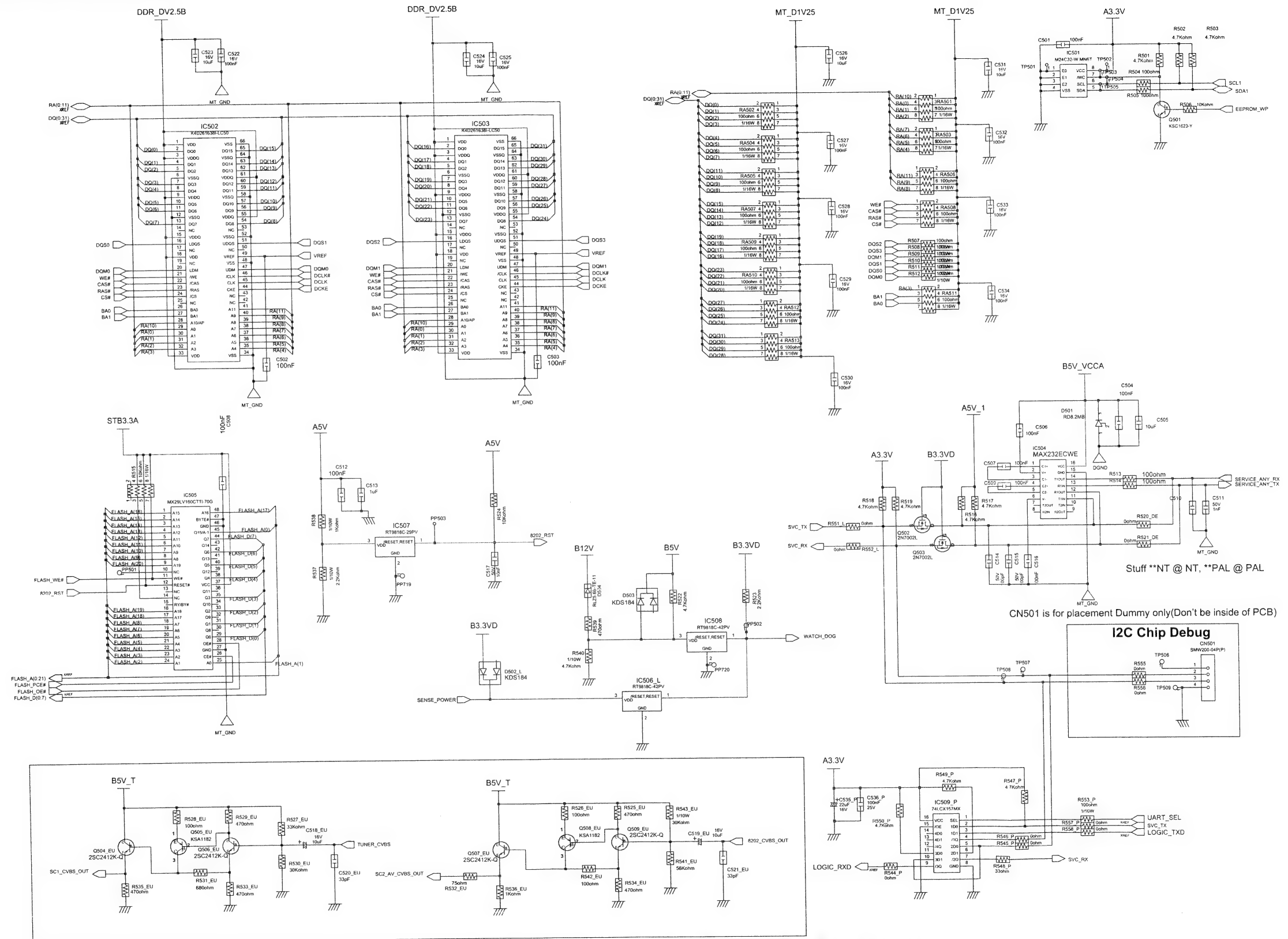
| | | |
|----------|-------|-------|
| SEL_HDMI | HIGH | LOW |
| OUTPUT | HDMI2 | HDMI1 |



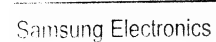
7-2-5 DDR_FLASH

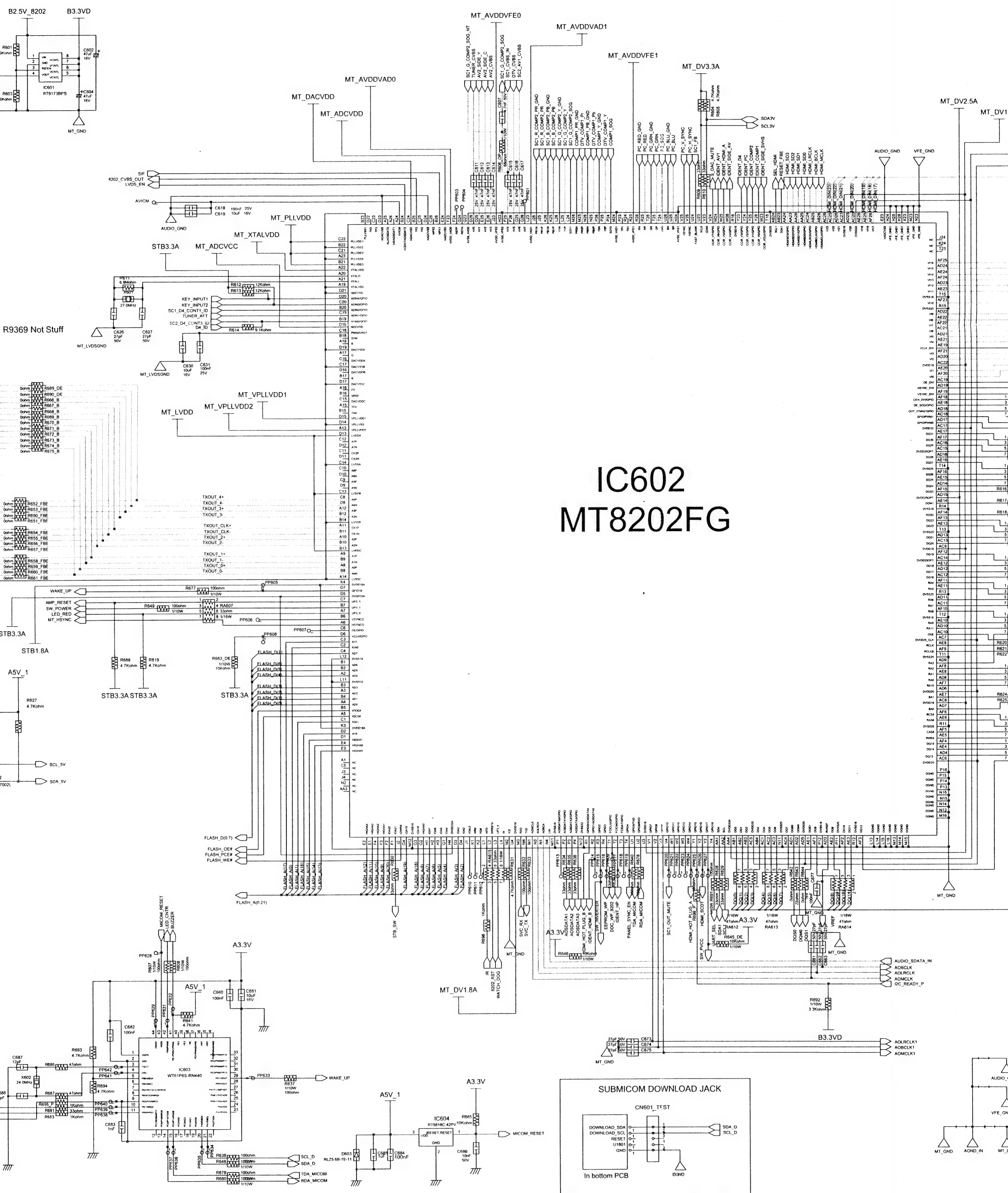
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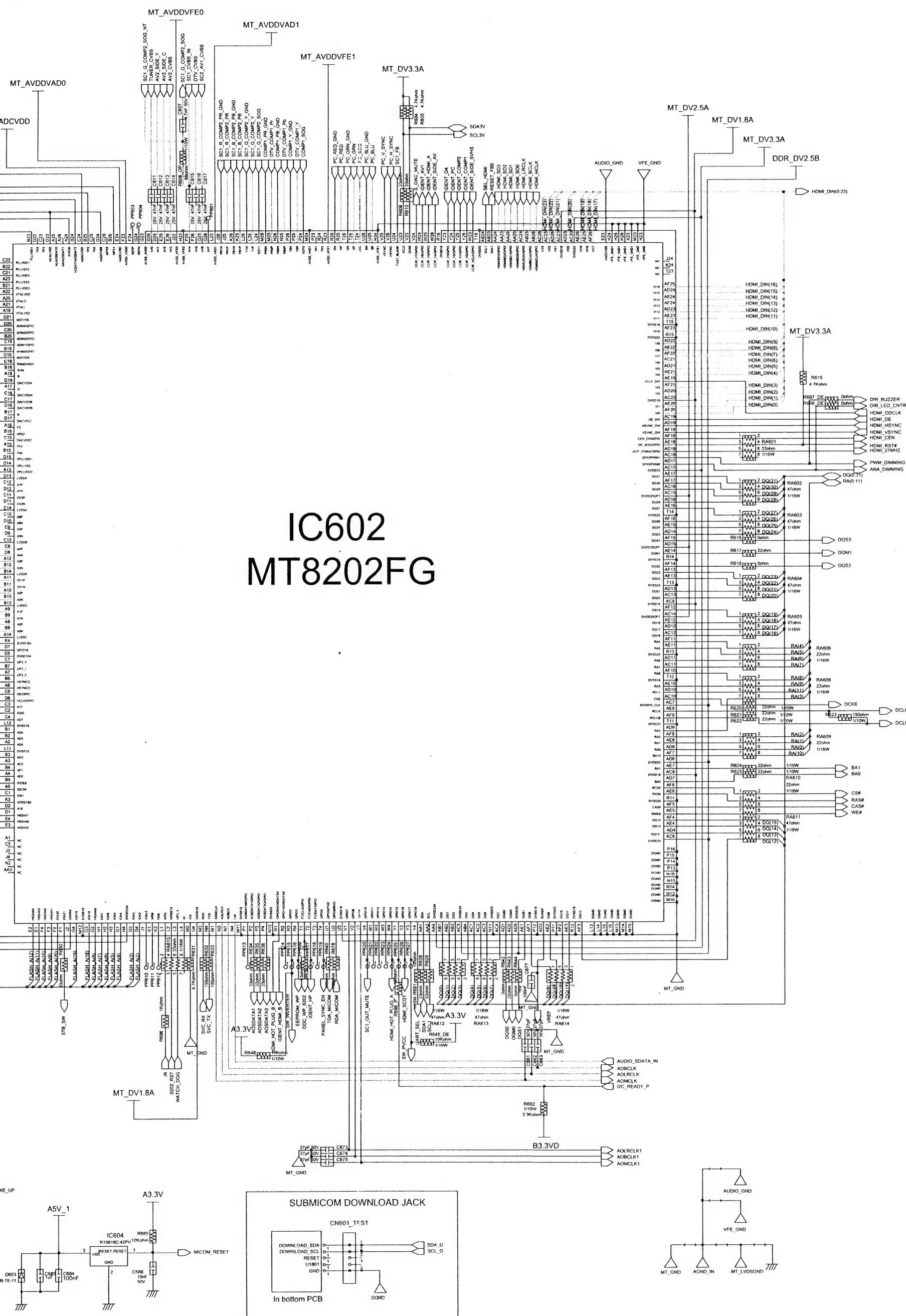
| | |
|-------|-------|
| _____ | Power |
| _____ | Vidoe |
| _____ | Audio |



Scart Option



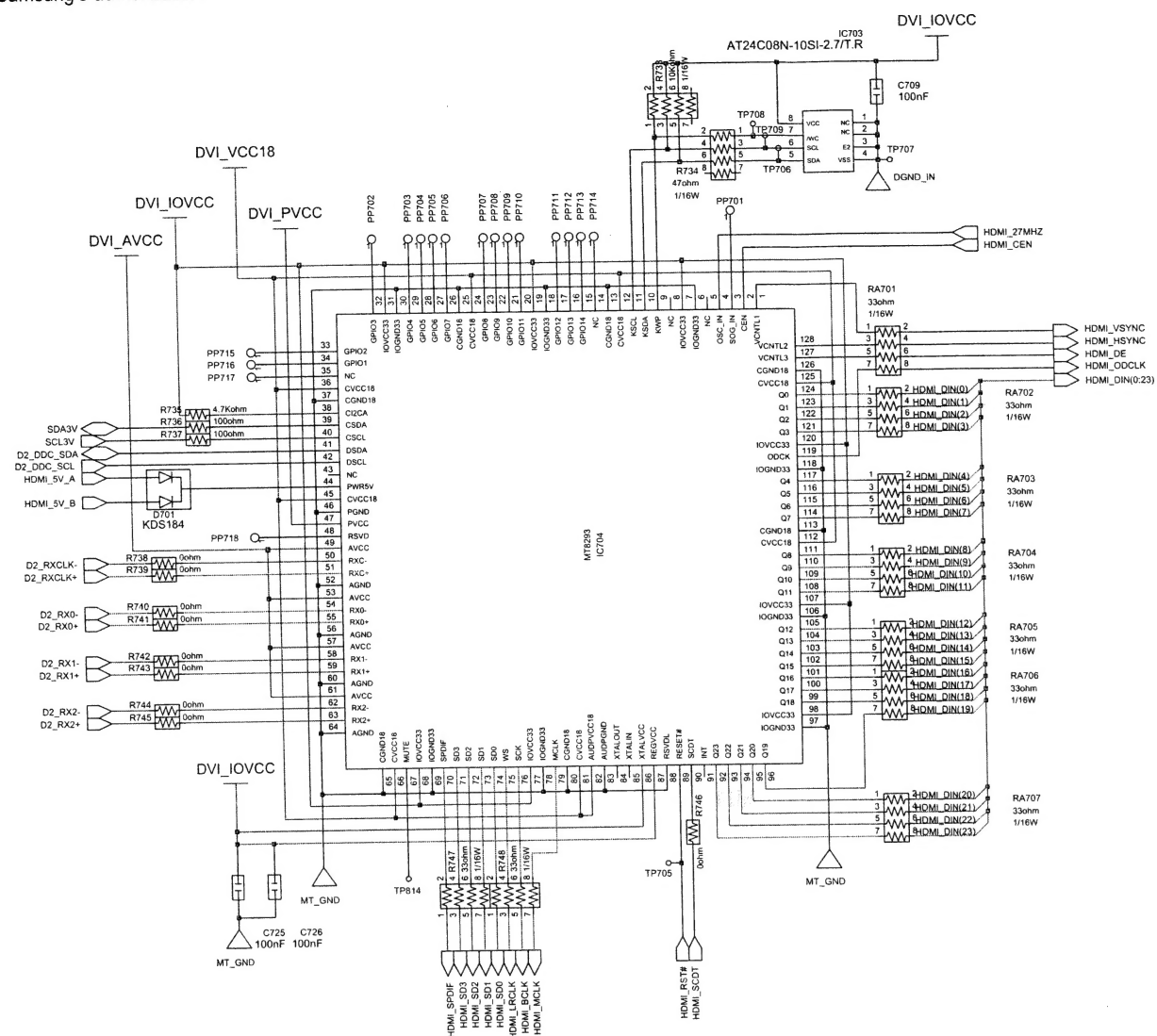




7-2-7 HDMI_MT8293

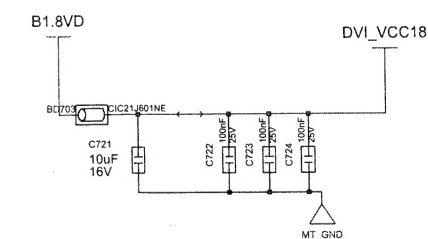
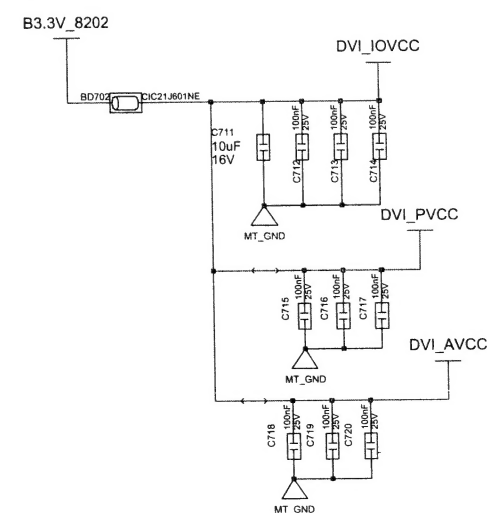
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|-------|-------|
| _____ | Power |
| _____ | Vidoe |
| _____ | Audio |

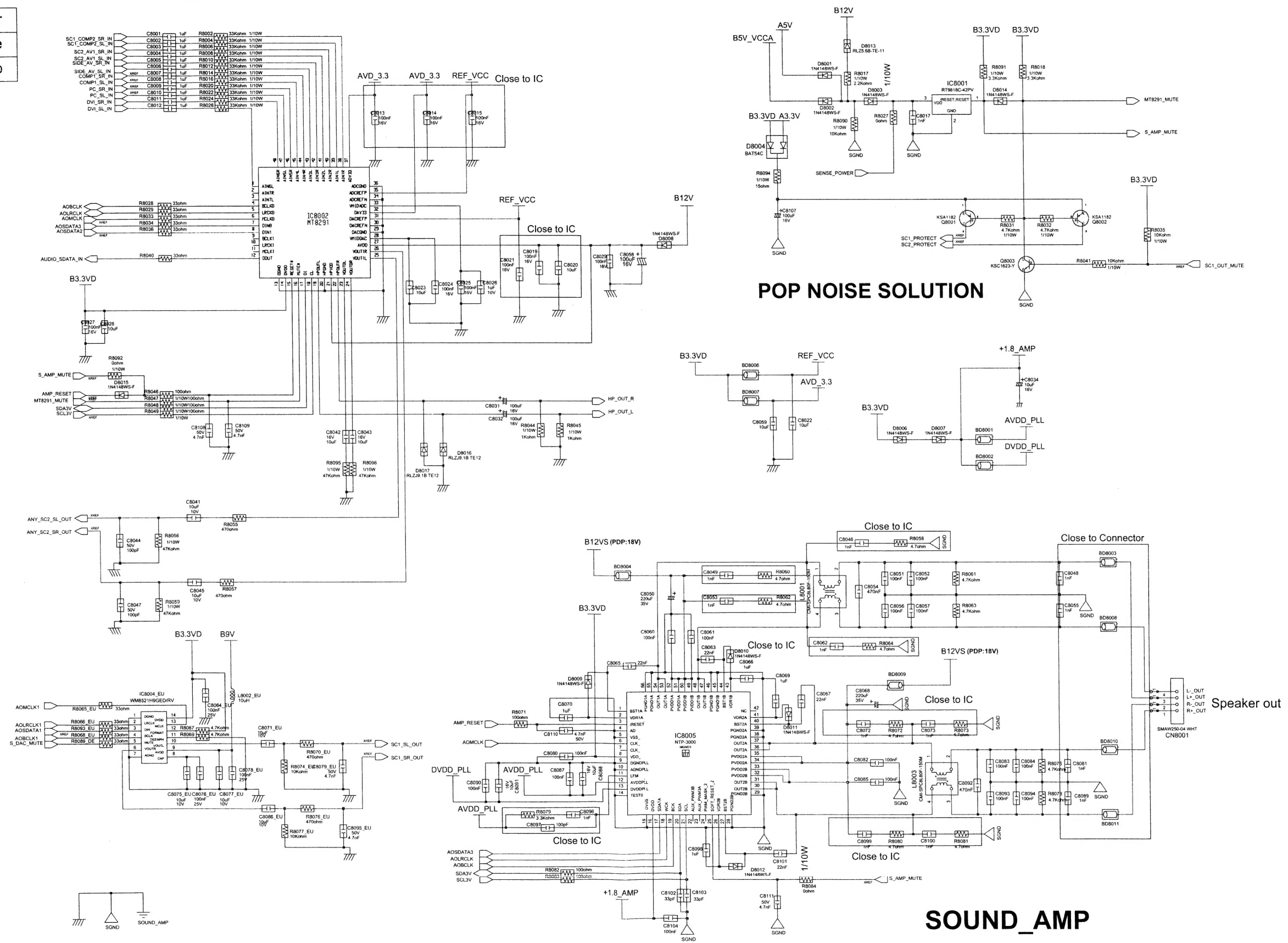


0:23) DIN(8:15) = BLUE/Pb(0:7)
DIN(0:7) = GREEN/Y(0:7)
DIN(16:23) = RED/Pr(0:7)

Near to Connector






| | |
|-------|-------|
| _____ | Power |
| _____ | Vidoe |
| _____ | Audio |

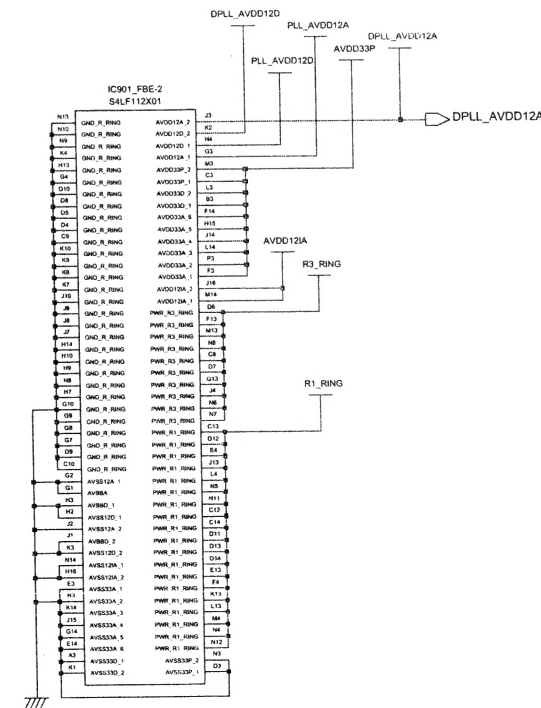
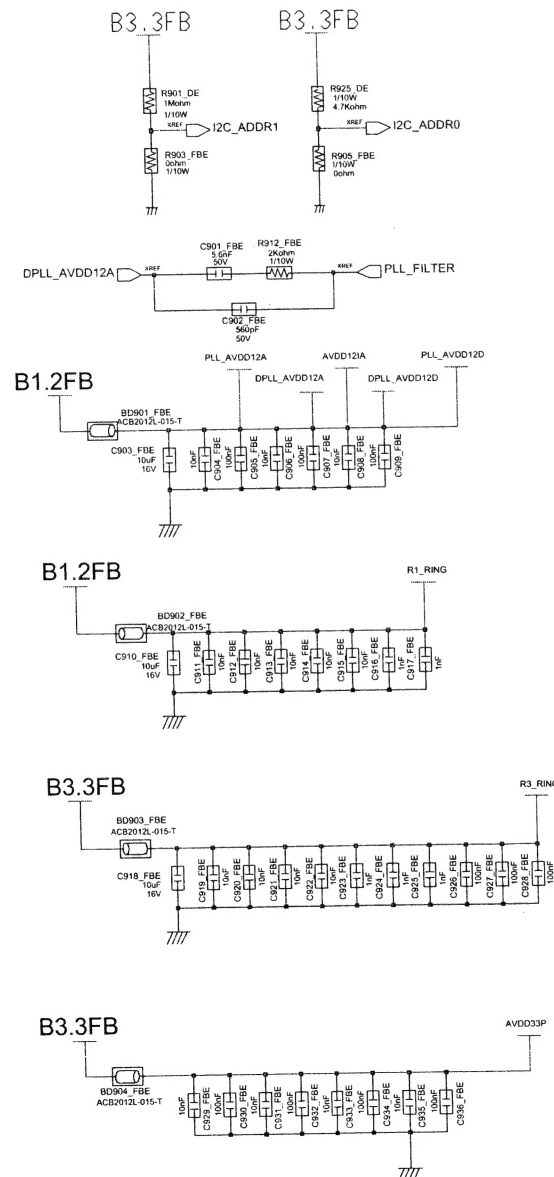
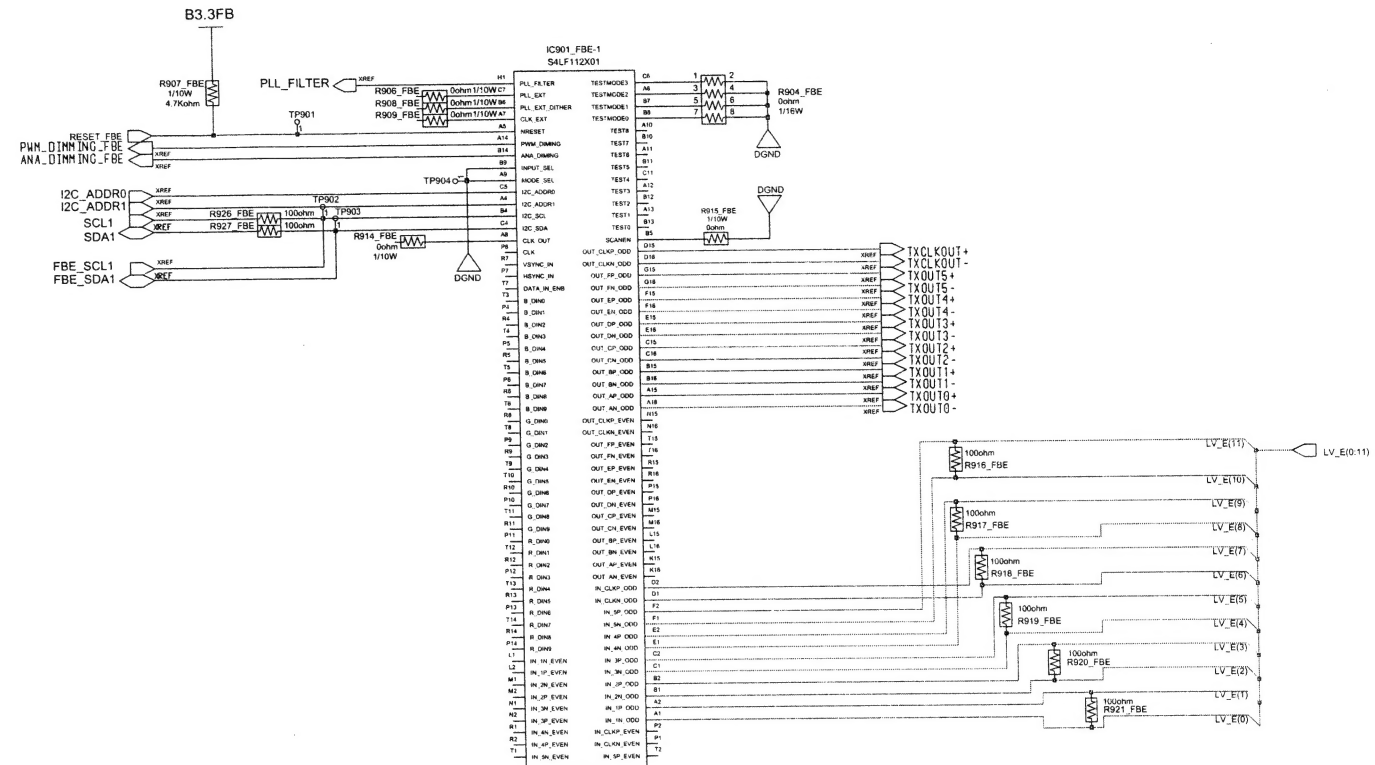
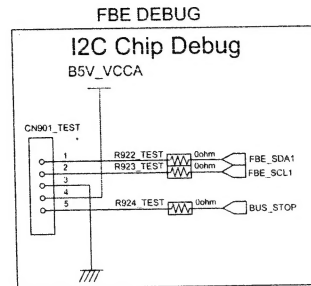


7-2-9 FBE_LVDS

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| | |
|---|-------|
|  | Power |
|  | Vidoe |
|  | Audio |

FBE 2

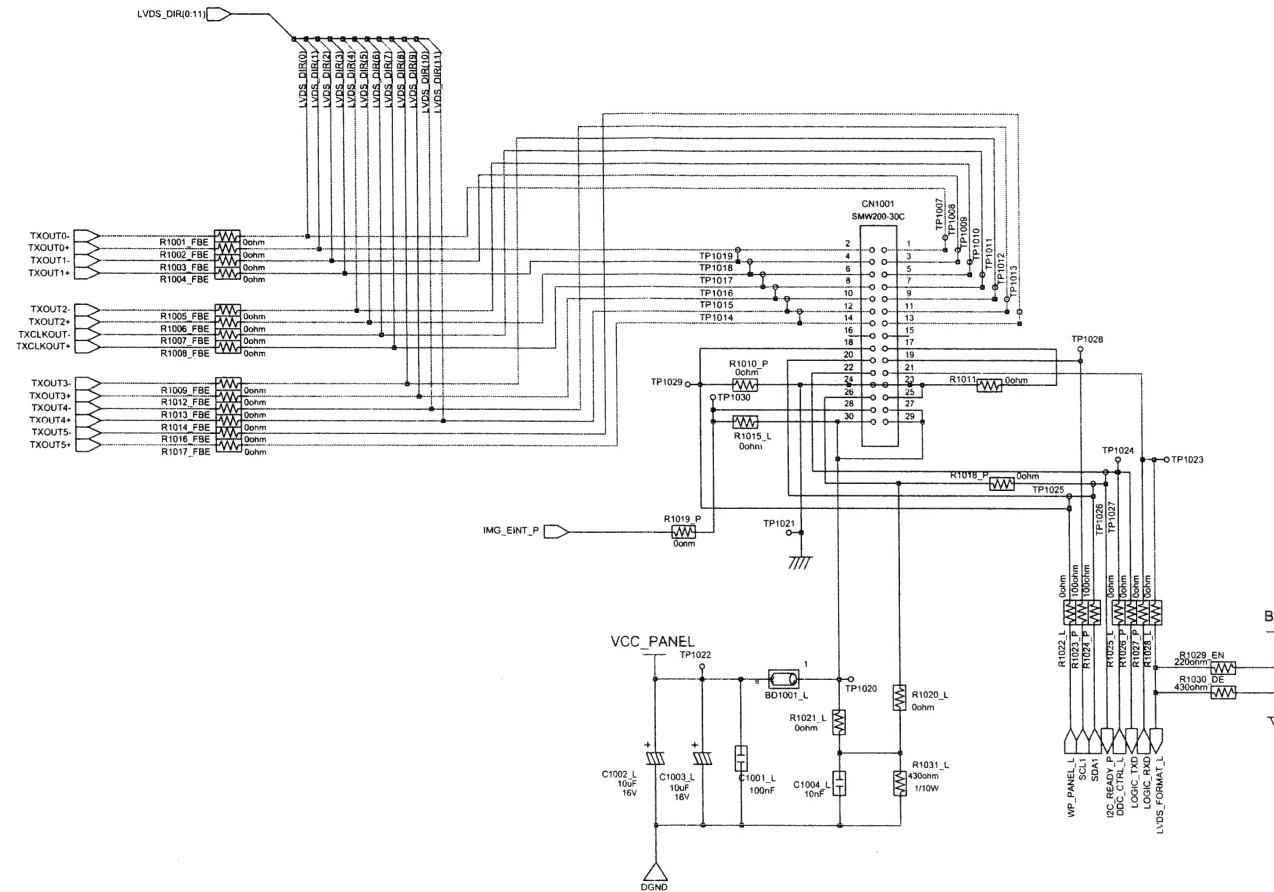


7-2-10 LVDS_TX_LBE

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| | |
|-------|-------|
| _____ | Power |
| _____ | Vidoe |
| _____ | Audio |

LVDS&Dimming



LCD OPTION

